



Roots of an Appealing Post-Apocalyptic World

Ayca Ozturk

History and Theory MArch Urban Design
Bartlett School of Architecture, UCL

Tutor James Delaney

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Abstract

This report investigates the Post-Apocalyptic Videogame Genre and tries to find the element that makes both the genre and the worlds that are loved by many people this popular. To ensure that; first, we will investigate the history of storytelling and how the video game narrative affects and changes it, and how cutscenes play a part in this process. With these, we will have an understanding of how storytelling in video games is shaped as a new genre. Then we will look into people's interest in the post-apocalyptic genre and the elements that a designer needs to create the world's narrative and aesthetic. I believe without understanding the design process of the post-apocalyptic worlds, we can not understand the elements that are used to create a story. After that, we will investigate ten games to pinpoint the elements that ensure the world's success, which is, as we will find out, mostly storytelling. The aim of this task is to understand what the consumer, in this case gamers, like and does not like. We will also investigate the effects of level design and atmosphere of these games to argue about how they shape the storytelling of these video game worlds. How they add to the story of the game and can make the player understand the story with small hints. The environment design of any game adds to the story massively and creates an emotional response in the player. In post-apocalyptic genre however, it is one of the key elements that shows the player the hints of the past. Hence it is one of the key design elements of the genre. After we agree on the importance of storytelling in post-apocalyptic video game worlds, we will investigate the implementation of this research in the game we designed.

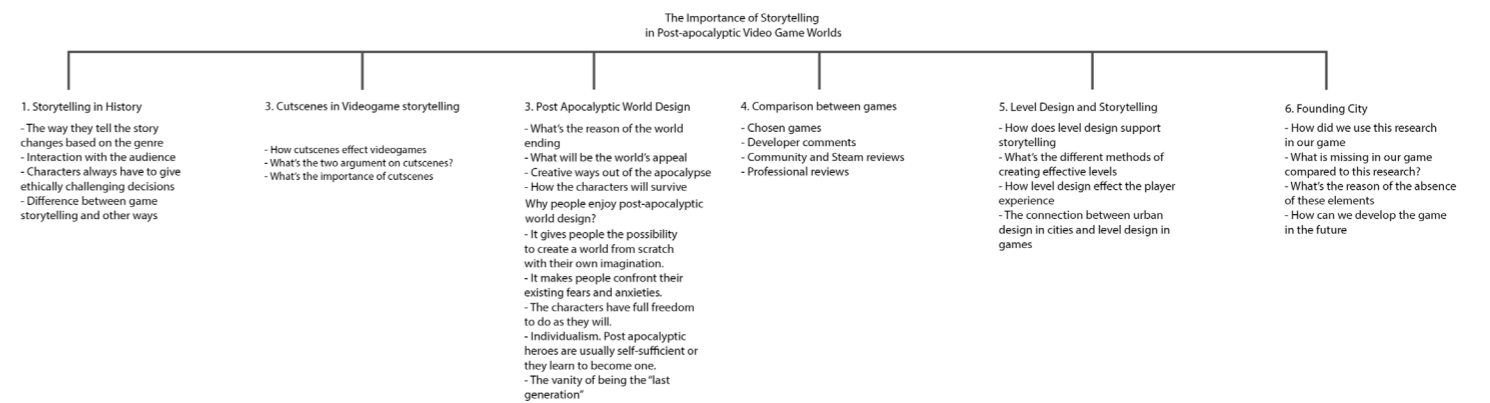


Figure 1 Structure of the report



Storytelling in Videogames

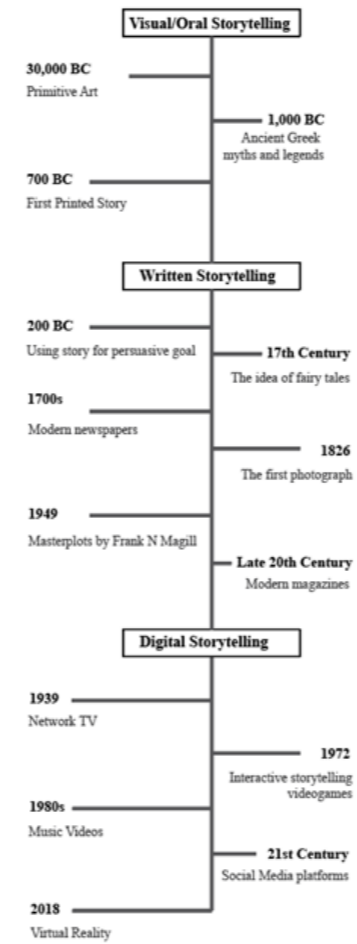


Figure 2 History of Storytelling, Referenced by Matt Peters



Figure 3 Bioshock Infinite, Irrational Games, Virtual Programming, 2013, Interactive Storytelling

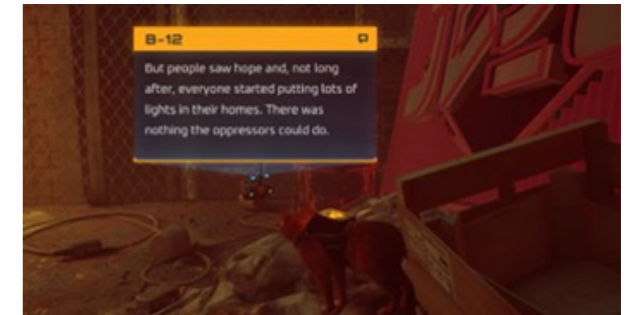


Figure 4 Stray, BlueTwelve Studio, 2022, Interactive Storytelling

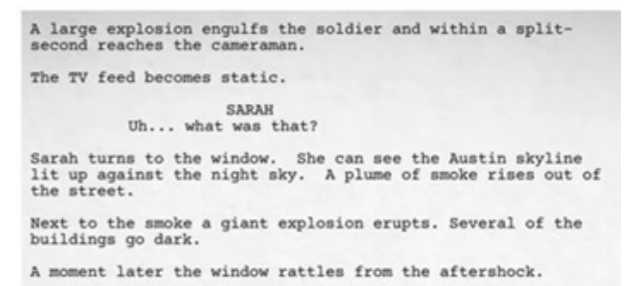


Figure 5 Last of Us, Naughty Dog, Iron Galaxy, 2013, Interactive Storytelling

Storytelling is one of the most important aspects of history. People transferred teachings, important messages, and their imaginations with storytelling. It was used to warn people, entertain people, teach people lessons, etc. The earliest method of storytelling was by speech, the stories were passed down in families as evening entertainment. Then it was written and drawn, people started writing stories making little picture books for these stories. The more technology grew the newer methods were added, first silent and black and white cinemas then they got to colour and voice, and so on.(Figure 2) The newest version of storytelling is through games, games add a proper interaction between the story and the audience. *“They have to be engaged actively. You find purpose in finding something meaningful within them.”* (Hellerman, 2021) Even in its earliest methods, storytelling was never a one-way interaction, the moment a story is told it is interpreted by the audience and their imagination. With games, this interaction became more obvious and let the storytellers have more options. When we look at the videogame narrative and how the observer receives them, we can notice how much people enjoy being able to control the story.

“For example, watching a cutscene in a videogame can create negative emotions if the player does not feel that their own action has somehow triggered this event, or that he or she has affected this outcome” (Hurme, 2016)

While the game narrative is unarguably the newest method of storytelling, it behaves differently from the traditional ones.

“The main difference is that computer games cannot function on their own, the games need at least one player who plays the game and interacts with the story. This means that the story is not in the box, it is found in the interplay between the code and its users” (Carlquist, 2002)

In this sense video game narrative is creating a new sub-genre and evolving itself. In video games, while there is a written narrative that’s presented to the player, but it is also expected to give the player freedom.

“A popular approach to combining the two has been to alternate between them, interspersing “cut scenes” that advance the story throughout the interactive game.” ... “However, the solutions so far proposed present several limitations, and currently none are completely satisfactory.” (Joan Llobera, 2013) In many ways, storytelling and narrative in video game fiction need to be improved and it is in its testing and learning era.

The main thing to mention about videogame narrative is, it is done in two ways. “the structure, referring to the progression of the story, the different sections and subsections, and how they are connected and interconnected to form a plot, and the portrayal: how the game conveys or shows the story” (Stone, 2019) There are four types of structures videogames used to narrate their stories; linear, string of pearls, branching story and lastly amusement park model.

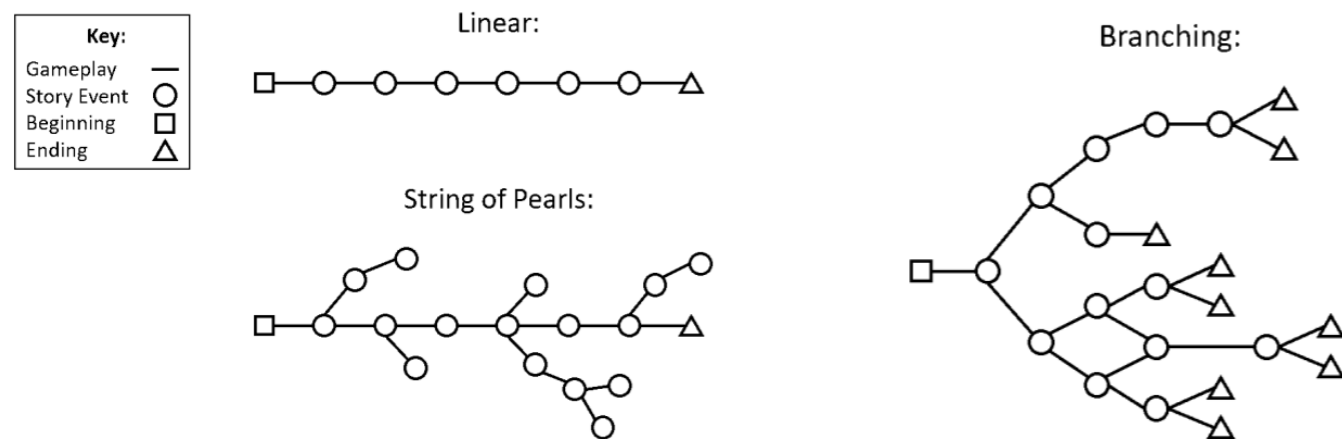


Figure 6 Types of Narratives, Chris Stone, 2019

Linear - “In a linear narrative, the story progresses from one event to another in a single straight line, with no deviation, backtracking, or skipping ahead. In games, the linear narrative offers players no interaction with the story.” (Stone, 2019)

String of Pearls - “This is where the story is told in a linear fashion but can be interrupted by player freedom at times. This is a structure unique to video games, as the interactivity required for the player freedom cannot be found in other mediums.” (Stone, 2019)

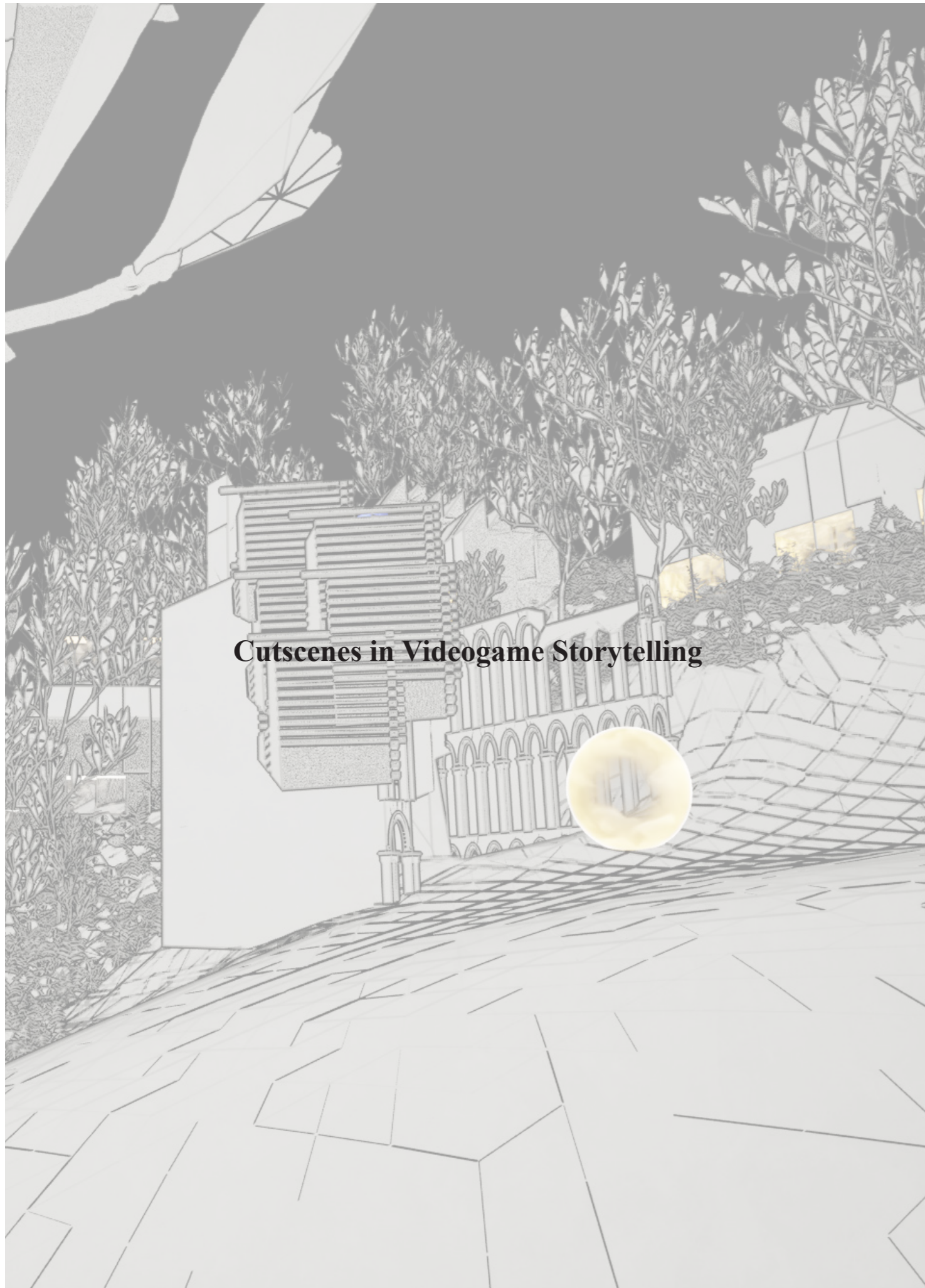
Branching – “The third narrative structure is a fully branching story, where player choice plays a major role in how the plot and characters in the world develop, and how the game ends. This type of narrative has been attempted before video games, in the form of interactive books: this type of novel gives the reader choices at the end of each chapter, each choice sending the reader to a different chapter, giving them a chance to create their own story.” (Stone, 2019)

Amusement Park – “which is very like the branching narrative except players access story by exploration rather than by completing missions.” (Stone, 2019)

All of these types tries to tell a story in an interactive way. Even the linear method of storytelling tries to make player the part of the story in some way. Sometimes they do it with selective options in conversations and sometimes they make the player find the story of the game with puzzles. (Figure 3 Figure 4 Figure 5) But these methods are usually newly found and a product of experience that came from the earlier models of storytelling.

The narrative of video games changed with time. When the videogames started having narratives, they existed to provide some context for the player but in modern videogames, the narrative has the same level of importance with the gameplay. There are several methods to convey the narrative of the game to the player. An important method to tell a story in video games is the cutscenes.

“Cutscenes can combine dialogue and action in a way that keeps the player in action and are used to convey plot development in games the same way film does.” (Stone, 2019) Other methods to convey the narrative; are text, dialogue, environment, and game world. Most of the successful games merge all these methods to create effective storytelling for the videogame.



Cutscenes in Videogame Storytelling

When it comes to cutscenes in video games there are controversial opinions on them, the main reason for that is players expect games to be interactive mediums of narrative and storytelling but cutscenes do not allow players to interact with the story or have any type of choice. The other side of the argument believes that even though cinematic storytelling did not originate in the videogame medium, it does not mean it won't be useful for creating an interactive story.

If we start with the first argument, they mainly argue that during cutscenes players can not interact with the story and cutscenes can distract gamers.

"cutscenes can distract the gamer from her actual goal. When she sits down to play a game, she doesn't necessarily want to watch a film. She has a DVD or Blu-ray player for that. Rather, she wants to actually engage and control a character." ... "Debate surrounds Activision Blizzard hinting that the publisher may at one point take all the cutscenes from StarCraft 2, stitch them together, and sell them as a movie. They estimate they could make millions of dollars doing this." (bitmob, 17)

This argument is strong on its own because we can observe that gamers also enjoy watching the movies of the games they played. A perfect example of this is the *Last of Us* TV Series that HBO released this year. Most of the players already played *Last of Us* as a game but the series was also a big success with 4.7 million viewers (White, 2023), and because of the series the game grossed about \$1 billion worldwide as of 2020. (Mansoor, 2023) Of course, not everyone who watched the series was a gamer, but we can easily assume most of them were gamers or heard from gamers that it will be a good story to watch. But in interactive storytelling, the game cutscenes should be a supporting element of the game's narrative instead of giving the player the whole story.

"But in theory, that plan shouldn't even be allowed to work. Cut scenes need to be a tool in the writer's arsenal — not the means by which they tell an entire story. Just as a screenwriter does not rely entirely on either dialogue or on-screen action to completely tell a story, games must rely on both in-game action and well-crafted cut-scenes to provide the full breadth of characterization and action the narrative deserves." (bitmob, 17)

A perfect example of this negative side is the cutscenes and gameplay of *Death Stranding*, when a player starts the game they can just sit and do nothing other than watching cutscenes for more than half an hour. And whenever the player is allowed to play the game, they can only walk. While the graphics of the game are objectively one of the best, players usually got bored after the first couple of hours. In my opinion, *Death Stranding* could be better if it was a TV series or a movie. (Figure 7 Figure 8)



Figure 7 *Death Stranding*, Kojima Productions, Guerrilla Games, 2019, Andrew Burnes

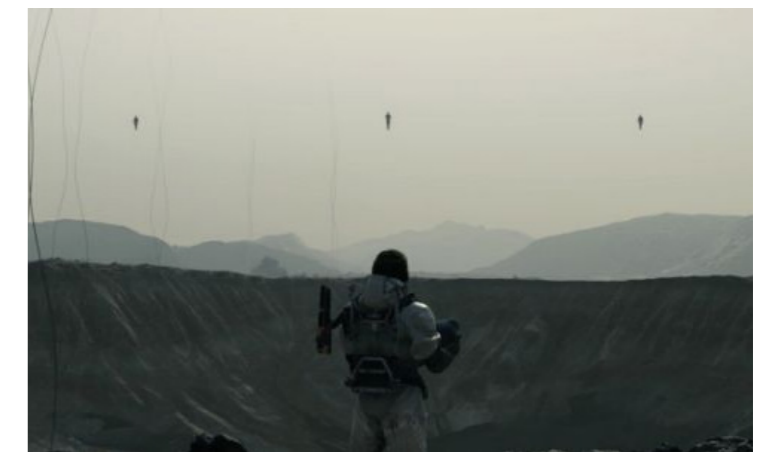


Figure 8 *Death Stranding*, Kojima Productions, Guerrilla Games, 2019, Arjun Krishna Lal

On the other hand, while the games are an interactive method of storytelling, they are still on the visual side of the storytelling group. And modern games do their best to include the gamer in the cutscenes.

“Games are interactive, sure, but they’re also a visual medium. As much as they should use interactivity to tell their stories, they also should use composition, framing, color, and other elements that make for compelling visual storytelling.” (King, 2023)

Cutscenes are a way of storytelling in video games, they allow the writers of the story to direct the player in the way they intended. Even though the games are an interactive method of storytelling, they still have a start, a middle, and an end. While the choices of the player can change the story, they still need a general story and a message they want to tell their players. Back in the days when games did not have the best graphics, the game designers focused on telling the story through texts, conversations, etc. After the quality of the graphics improved, the game industry started taking storytelling techniques from films. (Productions, 15) Cutscenes is one of these methods, it’s a method when it is well executed, the result could end up boosting the story to another level.

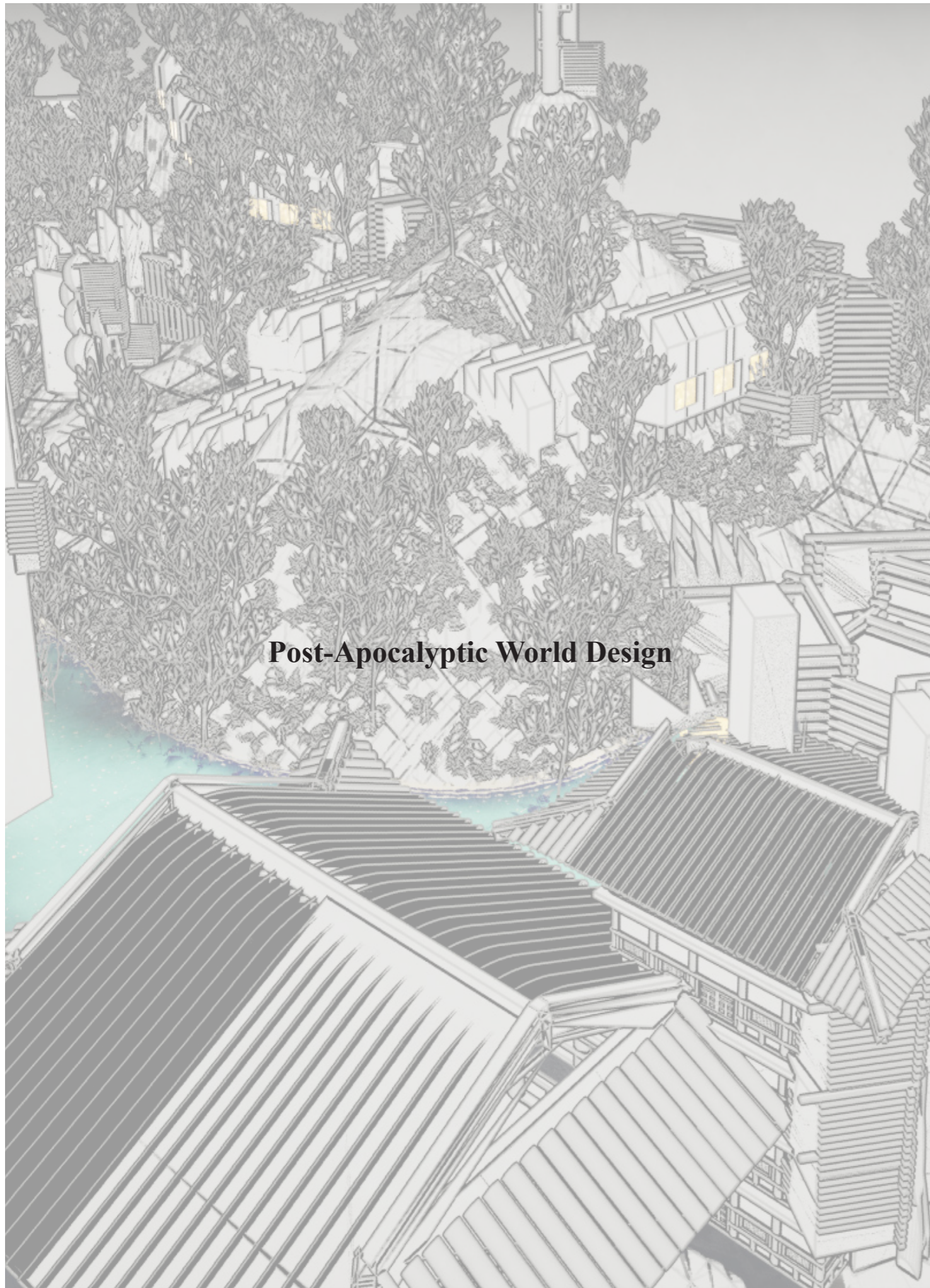
This argument believes that cutscenes can be an effective tool, but for them to be effective they need to use it in a careful manner. Developers started to try including the player in their cutscenes to avoid the previous argument and let the player control the game. They do this with conversations where players can choose options and with quick-time events. But sometimes, these choices or activities won’t affect the story or even the gameplay at all. When the choices they make in the conversation affect the gameplay, gamers sometimes feel frustrated while trying to figure out the right thing to say or do but in general, their knowledge of the story increases. And when the gamers get quick time events during cutscenes they might feel like they are doing those special attacks. *The Spiderman* series does quick time events in their cutscenes well. While they use different combat styles in cutscenes, they allow players to do them with quick-time events. Due to the quick-time events, while the *Spiderman* series has lots of cutscenes inside the game and make players feel like they are watching a new *Spiderman* movie, players do not get bored during the cutscenes and still feel in control and powerful.



Figure 9 Spiderman Remastered, Insomniac Games, 2022, Quick time events



Figure 10 Spiderman Remastered, Insomniac Games, 2022, Quick time events



Post-Apocalyptic World Design

Fiction has many genres, and the world's design changes entirely based on these genres. So why do people enjoy post-apocalyptic worlds this much? There are couple of reasons for that. Firstly, they offer total freedom. The world and the system of the world doesn't exist anymore, but the survivors of the world have the knowledge to build it back up again. The only limitation the hero of the post-apocalyptic world has is to eliminate the existing threat before moving on. After the society collapses, it allows the survivors of the world to create their own society. There is hope that they can build a better society from the previous one's ashes. Baccolini mentions this hope as;

"dystopias show that a culture of memory one that moves from the individual to the collective is part of a social project of hope. But the presence of Utopian hope does not necessarily mean a happy ending. Rather, awareness and responsibility are the conditions of the critical dystopia's citizens." (Baccolini, 2004)

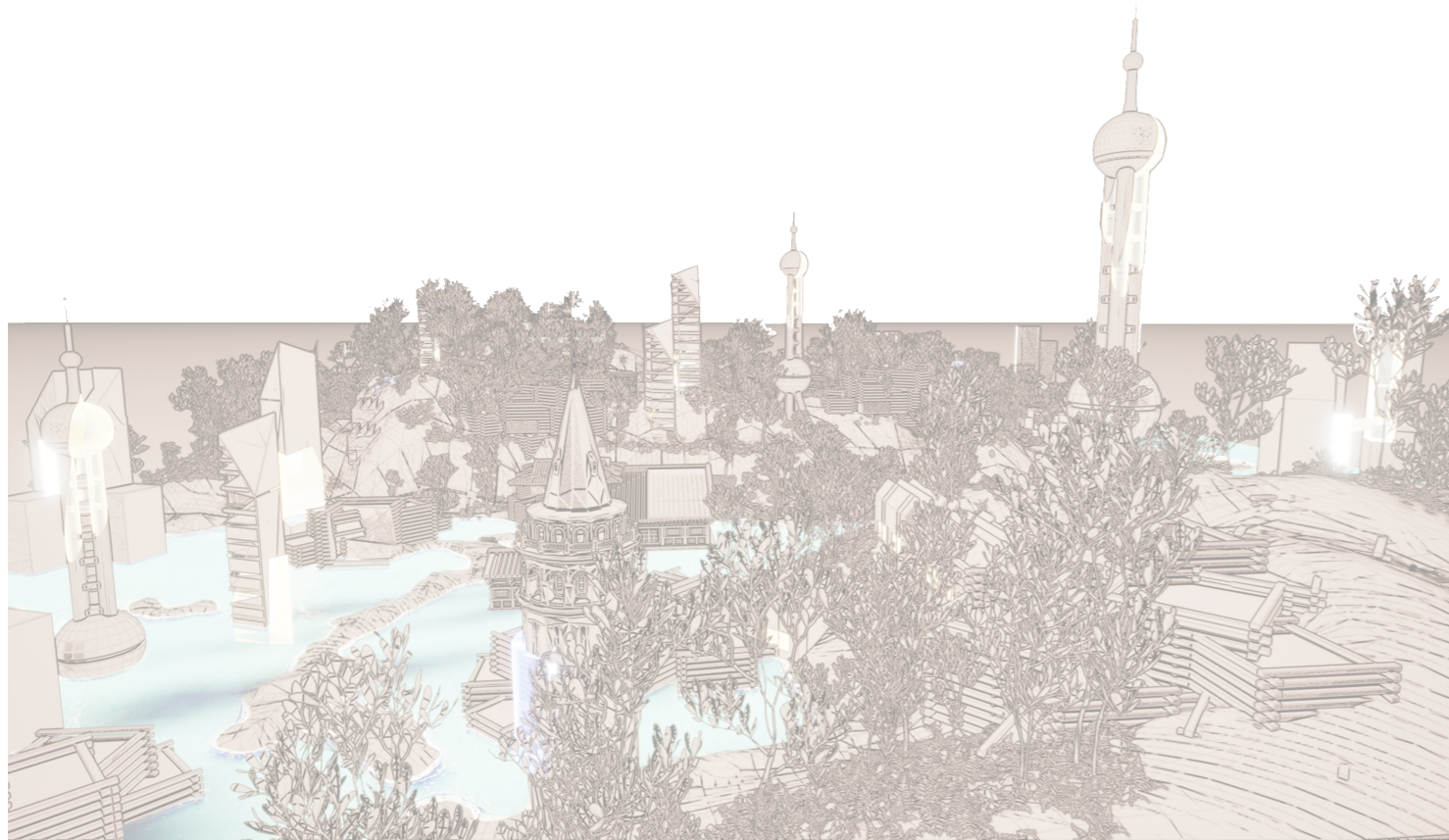
The hope isn't necessarily a happy ending, the hope we feel in the post-apocalyptic world is the hope of being responsible this time. When building the society back again, it also allows the hero to implement their belief and gives them full freedom to create their own world. Following this, another reason why people enjoy post-apocalyptic worlds is, it allows people to confront existing fears and anxieties. At its core, it creates a possible ending for the world and makes people think about what they would do in that situation. People like to think about the worst possible option even in their mundane decisions. The world getting destroyed and society collapsing is the worst possible outcome a person can think about. On the other hand;

"Lowell argues that the modern world is in fact dystopian, prefiguring the discourse of globalization by attacking the imposition of uniformity on the planet." (Hughes, 2013)

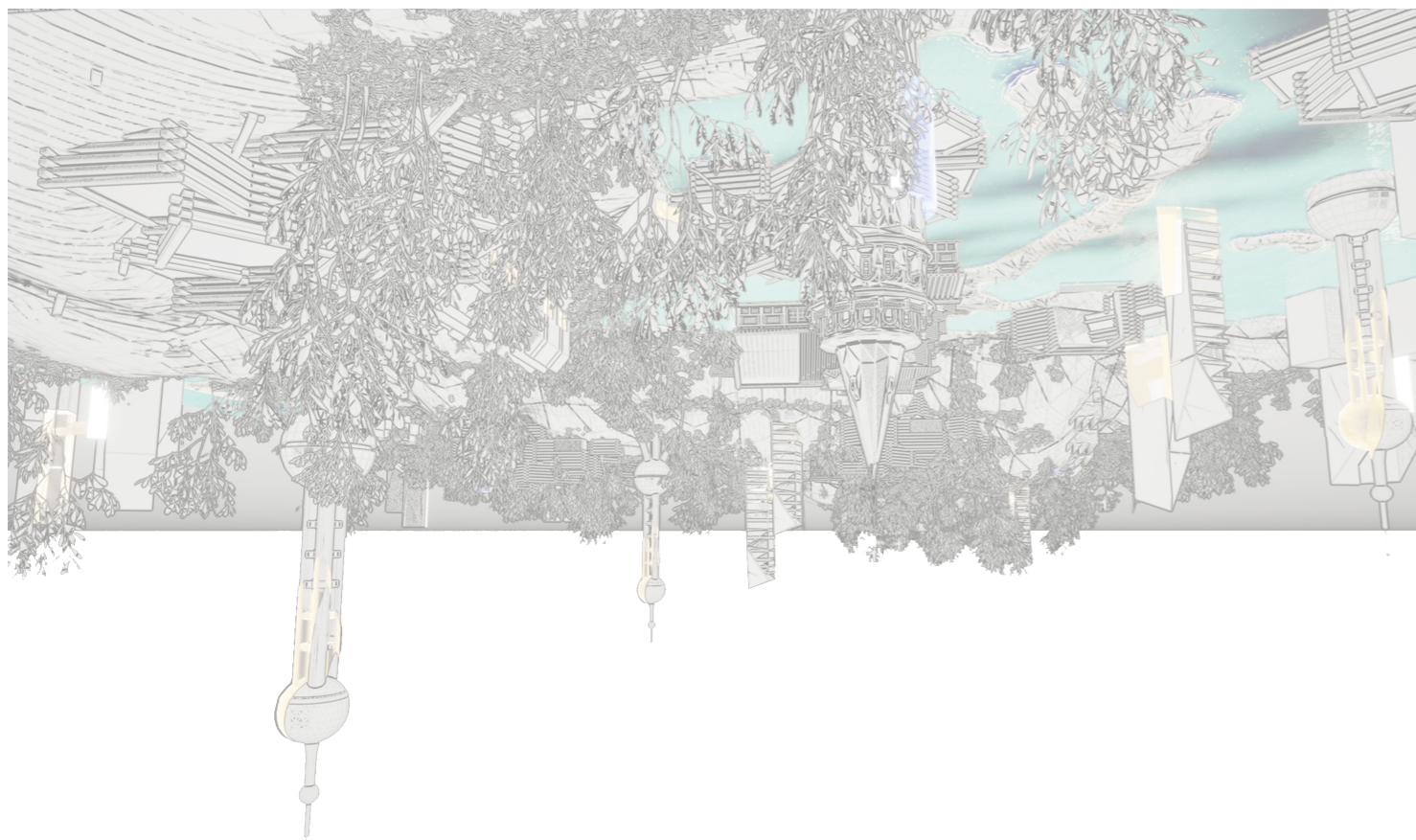
In the books we read or movies we watch we can see a clear resemblance with the world we live in and dystopias, so it is inevitable to not think about the apocalypse. Hence everyone who lived on this earth thought about a post-apocalyptic scenario at least once. Post-apocalyptic narratives show us the anxieties we had in our life time about the world. They also give us a sense of practice and think about what we would do in that situation. Lastly, the characters of post-apocalyptic worlds are always self-sufficient, or they must learn to become so. This gives the audience a feeling of individualism and power. In a society where everyone is dependent on others to do their job to function in daily life, a sense of self-sufficient life sounds appealing. It feels empowering to think about. When we put ourselves in the post-apocalyptic hero's shoes, we can test our brain if we can survive in that condition or not. To sum it up, it lets people think about a version of our world that allows them to investigate their own fears while letting them be self-sufficient, and on top of that it also lets them shape this unfinished world.

But how does one design a post-apocalyptic world? At its core it only needs three things; what caused the ending of the world? How does the hero of it survive? And lastly a hope, a way out of the apocalypse. But in details, there are other things to decide, like what the appeal of the world will be and how the side characters react. They need backstories and characteristics as well as our main character. The side character stories and history gives the audience a better understanding of both the past world and how much the world has changed after the event. Side characters also allow the audience to observe the hero's true self. If we only have our hero and their monologue, then we can only learn about their own inner world. But if we make our hero interact with other people then we get to learn about our hero's personality. We need to get in their head to put ourselves in their shoes. With this, most of the time, video game storytelling also puts the player in a position where they must make ethical decisions and choose how their character will act in those situations. Sometimes the player is put in a position to pick a side when they did not get all the information about the world. The game narrative should force the player to think.

"As the connections between the perspectives remain indeterminate (or are negated), the player is urged to close the blanks between them." (Farca, 2018)



Comparison Between Games



Even though post-apocalyptic fiction is popular, not every video game designed in post-apocalyptic genre is loved by the players. When we investigate the post-apocalyptic video game genre, we can find hundreds if not thousands of games. While some of them are known by everyone and engraved in everyone's memories, some of them doesn't even have two players playing the game. But what is the difference between those games? What causes some games to be well-known while others get lost in the crowd? To understand the root of mentioned difference between games, five low-rated and five high-rated games were picked. The list of lowest-rated games is as follows; *Dead Man's Diary*, *Escape Dead Island*, *Fallout 76*, *I am Alive*, and *Rage*, and the list of highest-rated games is as follows; *Dying Light*, *Fallout New Vegas*, *Half-Life 2*, *Resident Evil 4 Remastered*, and *Metro Exodus*. These games are analyzed in three different ways, first the developer comments and design process, then the professional reviews on the games, and finally the community comments and gamer experience. The paper only includes the summary of the analysis instead of the entire process.

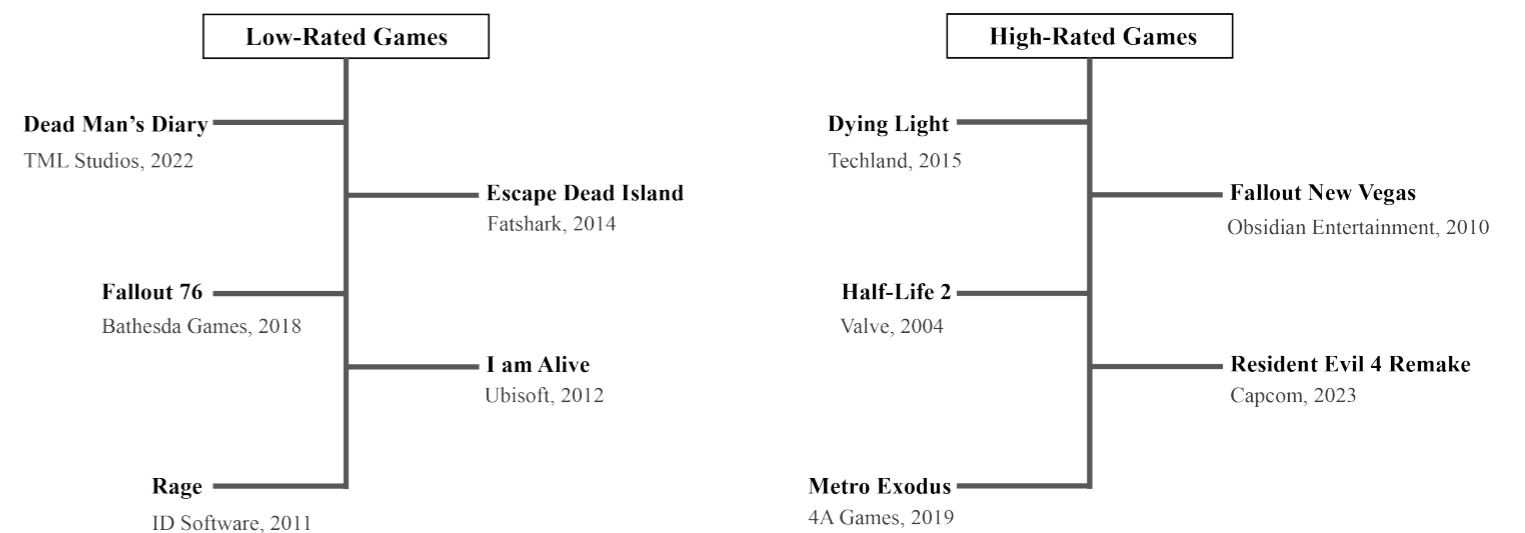


Figure 11 Chosen Games for Comparison

Low Rated Games

First, the group of low-rated games will be discussed. Low-rated games were picked based on *GamingBolt's* youtube video, and only the games that were criticized because of their gameplay are analyzed. The first game of the low-rated games *Dead Man's Diary*. In *Dead Man's Diary*, we find ourselves in a world after a nuclear war. Our main mission is to survive in the hard conditions that come with it. One of the most important mechanics in the game is, you can die due to radiation. The game forces you to keep an eye on the radiation level at all times. Which is done with Geiger meter, and according to the players even that, a necessary equipment, is hard to find.

“When you do find the Geiger meter, eight in ten supplies are contaminated, meaning you can't do anything with them. On top of that, you have to find components that are incredibly limited.” (knight, n.d.)

There are many aspects of the game that players did not enjoy, there are mechanical issues like not enough inventory space, and materials are rare and usually covered with radiation. But in the root of all the complaints, players do not feel the connection between the character they play. The story of the game is given with monologues our character has while walking around the world, we don't have any other interactions. We get to know what our character is thinking from monologues, but we don't get to know the personality of the character due to lack of interaction with side characters. Most of the players don't even remember his name.

“You play a bloke whose name is omitted, or I've forgotten it. I didn't care much for him. He'll narrate the story with excessive monologues and diary entries without any characters to confide in. Each to their own and all that jazz, but I didn't feel the dialogue was suited and sometimes less is more.” (knight, n.d.)

Players also didn't like how repetitive it feels, they can't find many things to do in their playthrough and since it is a survival game, when they unlock the entire map this is a negative aspect. On the developer's website, it is easy to notice that the main goal was to create a realistic environment. They believed the main aspect of survival is being resourceful. This realism idea can be easily seen in the game graphics and the little puzzles they designed. This search for realism is appreciated by the players on the graphics level and they tend to find the world beautiful when it is daytime. But it is not well received when it comes to the gameplay level. And since the game is mostly played in the pitch black dark, the beautiful world can't help players enjoy the game.

“There are a lot of small details as well like burnt-out cars, shipping containers, oil drums, and general debris that really help make the environments feel alive.” (AAaron, 2022)



Figure 12 Dead Man's Diary, TML Studios, 2022, Daylight (Knight)



Figure 13 Dead Man's Diary, TML Studios, 2022, Night (Knight)

When we investigate *Escape Dead Island*, we start the game as Cliff, a character who wants to figure out how the zombie apocalypse started. He travels to a nearby island of Narapela with his couple of friends. When they arrived, things went south, and they were stuck on the island. Like *Dead Man's Diary*, players have a bunch of complaints about how the game is working, the combat system has problems, bugs, etc. but again the main issue is the inconsistent storyline and never knowing what Cliff will do. Devs kept the island small and focused on Cliff's mental condition, trying to make it a different gaming experience. While it gives the players a different perspective and offers new methods to play the game, most of the players didn't like how it was executed. Most of the player base enjoyed how it messes with your head, but the quality of the effect affected their experience in a negative way.

"So while the insanity angle as a whole is a huge plus, it doesn't have the support of interesting game mechanics behind it." (Butterworth, 2018)



Figure 14 Escape Dead Island, Fatshark, 2014, Sanity Normal (Hargreaves, 2014)

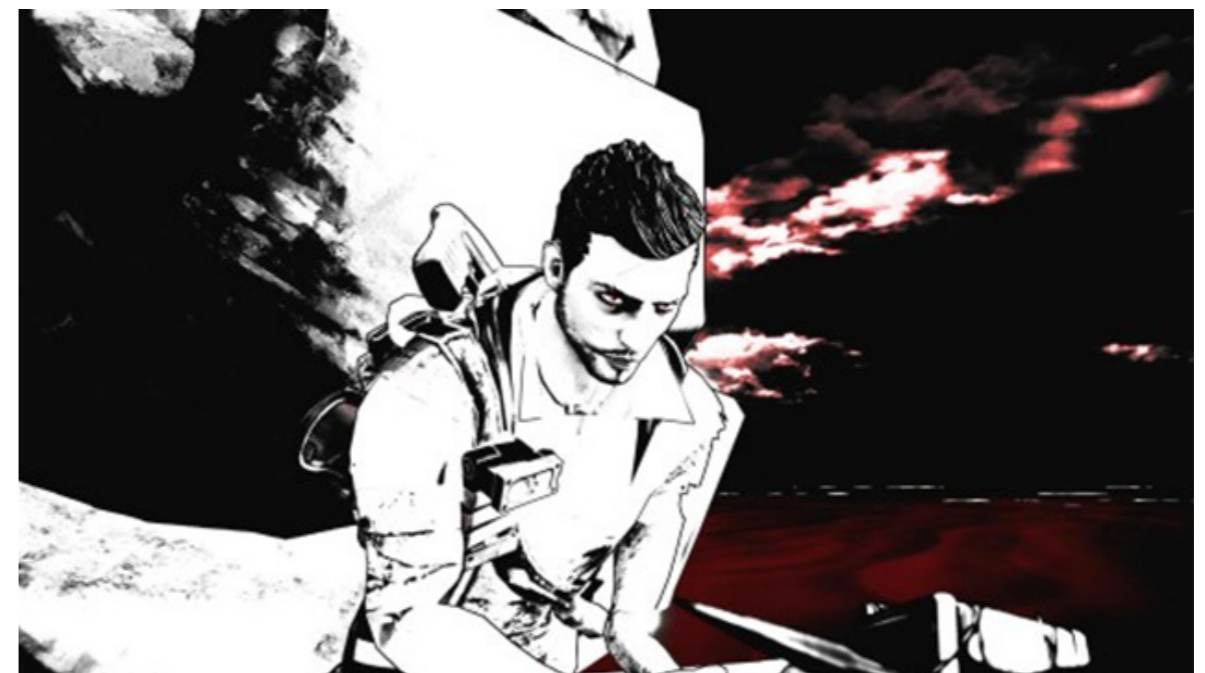


Figure 15 Escape Dead Island, Fatshark, 2014, Insanity (Hargreaves, 2014)

Fallout 76 suffers from similar issues as well, players did not like how the combat system works, the survival elements seem unnecessary given the materials are easy to find it feels like a waste of time, and there are many bugs. When the previous games were single-player, *Fallout 76* is a multiplayer online game, and expectations here are different. Players usually expect a good PvP system and a reason to group up in multiplayer games but in *Fallout 76* PvP system gives players nothing, so in-game players have no incentive to engage in it.

“Every living human that you meet in Fallout 76 is another player. Except that with only 20 or so players populating each server, the chances of you actually running into another survivor from the vault are slim.” (Ramsey, 2022)

Even the NPCs are robots so you nearly have no human contact in the game, the only humans you can see are the bodies of dead people around the quest areas, not even scattered around the world. Players usually talk about how they felt alone in a multiplayer game while talking about *Fallout 76*. Because of the lack of interaction, players also don’t get the hints they usually get from side characters about the story. And the players of *Fallout 76* did not like the lack of story.

“Most missions are little more than fetch quests. Go here, get the thing, bring it back, interact with a robot, job done. It’s mind-numbing in the extreme.” (Yin-Poole, 2018)

In short, players don’t get any context about the story or find out anything about the game world.



Figure 16 *Fallout 76*, Bethesda Game Studios, 2018, Killing Rats Quest (Yin-Poole, 2019)



Figure 17 *Fallout 76*, Bethesda Game Studios, 2018, Multiplayer (Yin-Poole, 2022)

I am Alive is different from all of the previous games, it is a survival game in a post-apocalyptic world, but your survival is also dependent on your ability to climb and scare the monsters. You don't particularly need to fight with them, they are afraid of your weapon, and you can use that to your advantage. In *I Am Alive* you must be above a dust cloud to be able to survive, the event that caused world destruction makes the dust cloud deadly for you. *I am Alive* does not have many mechanical issues or bugs, and players mostly enjoyed the first couple hours of their playtime. But all of them say the same thing after five hours of playing the game starts getting repetitive and boring.

“Unfortunately, because you face so many enemies you must repeat the same encounter many times, always following the same routine: surprise kill, shoot, ledge kick. Each time you go through the actions it highlights the simple mechanics.” (Benson, 2012)

Most of the reviews agree that *I Am Alive* has great ideas but failed to execute them inside the game. Because of that, the game ends up feeling flat and frustrating to play.



Figure 18 I am Alive, Ubisoft, 2012, Fog (Miller, 2012)



Figure 19 I am Alive, Ubisoft, 2012, Parkour (Benson, 2012)

The last low-rated game is *Rage*, it is not a completely bad rated game, players did enjoy the world of *Rage* and its bandits, gangs, mutants, etc. Players also enjoy its combat and play style, *Rage* loses points when it comes to the story. When it comes to giving the players a context in the world and building the world's story, *Rage* doesn't do that well. Most of the reviews argue that because of the lack of context, the game starts strong at the beginning and feels great but loses that shine after the mid-game. And because of this, it feels like every other shooter game.

"Rage isn't a complicated game. Despite what the developers might have suggested and we might have assumed, it's still set in a corridor." (McCormick, 2011)

While the shooting mechanics and graphics are very satisfying, it has the same context as most shooting games, there are not many aspects that make *Rage* unique in the genre.

With professional reviews, developer comments, and Steam comments, we can list the similarities players criticized.

Low-Rated Games Review Summary

- * The stories of the games are generally not that interesting or interactive enough.
- * Weapons and combat reviews depends on the game but are generally not that bad.
- * Not being an open game to discover around, people want to explore the world when it comes to post-apocalyptic world design.
- * Not being able to make choices throughout the game or game forces them to give certain decisions. Not having the option to kill or not, or choices they give has no consequences whatsoever. The linear storyline is not enjoyable when it's post-apocalyptic, players expect more freedom in post-apocalyptic worlds.
- * Forcing the survival aspect and making people search for food, water, etc. all day is criticized a lot too, people want to enjoy the world a little bit.
- * Length of the game – some stories are too short for the created world, and some are too long.
- * Voice Acting – Especially at the stage where it affects the storyline a lot.
- * Not having proper instructions to play the game.
- * Players don't like feeling alone in the game, they want some kind of interaction with side characters or other gamers.



Figure 20 *Rage*, ID Software, 2011, Shooting (McCormick, 2011)



Figure 21 *Rage*, ID Software, 2011, Shooting (McCormick, 2011)

High Rated Games

High-rated games were picked by *Stems rank list* and popularity. They were also picked carefully to be able to compare with the low-rated games. The starting game for the high-rated games is *Dying Light*. *Dying Light* is set in place Harran, a fictional city in Turkey. Objectively, on the story level, it doesn't offer something new. It is another open-world zombie apocalypse game just like *Dead Island Series*, but it also adds parkour elements to the game.

“Yes, it’s a mishmash of clichés and smart ideas shamelessly appropriated from other games. Sure, its storyline is uninteresting, and it has problems with pacing and flow. Yet there’s a polish here and a coherence of tone that we’ve never seen in Techland’s games before.” (Andrews, 2015)

Dying Light is more of a parkour game than a pure survival game. Due to the day and night cycle in the game, players’ survival is highly dependent on their ability to parkour around the world. Different than the low-rated games, *Dying Light* has a good multiplayer option where you can play as three people and the side story quests are top tier. While the players usually find the combat and driving etc. in-game clunky, they don't let this affect their game experience. *Dying Light’s* huge open world and mechanics are loved by most of the players, players mention the tension in this horror game is just the right amount. While it does not offer pure originality, it does well with mixing the elements that are already existing and creating an enjoyable gaming experience with those.



Figure 22 Dying Light, Techland, 2015 (Andrews, 2015)



Figure 23 Dying Light, Techland, 2015 (Andrews, 2015)

The next game we will investigate is *Fallout New Vegas*, here you are a courier in a growing post-apocalyptic world. While the main storyline is pretty good, players mention that they enjoyed the side quest line as well.

“There’s almost an overwhelming amount of places to find and every time you turn around someone will want your help.” (Steimer, 2012)

The game has engine issues, but the gameplay doesn’t let the players get too affected by these problems. *Fallout New Vegas*, compared to the other *Fallout* games, does something different and allows the player to play in first person or third person depending on their preference. From the reviews, we can clearly say people enjoyed this. The perspective change also changes the observation of the storyline, and it is a big point from that side. Compared to *Fallout 76*, the success of *New Vegas* is its storyline and how even though the game is a single-player game you never feel alone in the game. The storyline always assigns an NPC to travel with you, and this interaction with the game world is something players enjoy.

Also *“you gain Karma for murdering Legion members and lose Karma for killing NCR troops, so the lines weren’t so blurred after all. While it’s a little disappointing and short, you won’t (and shouldn’t) be spending most of your time on the primary quest.”* (Steimer, 2012) In short, you have consequences for your actions, while morality isn’t grey it is still an appreciated aspect of the game. Interactions with the game world and the consequences you get from your actions make *Fallout New Vegas* stand out compared to other *Fallout* games.



Figure 24 *Fallout New Vegas*, Obsidian Entertainment, 2010, 3rd Person view (Steimer, 2012)



Figure 25 *Fallout New Vegas*, Obsidian Entertainment, 2010, 1st Person view (Steimer, 2012)

The next game review we will investigate is *Half-Life 2*, “*Half-Life 2 is, simply put, the best single-player shooter ever released for the PC.*” (Adams, 2004) This game is a sequel to *Half-Life*, when the game ended our main character Gordon Freeman was traveling. *Half-Life 2* starts with Gordon arriving via train to City 17.

“*the real winner here is the way the story is presented. Through the eyes of Gordon Freeman, you’ll experience roughly 17-20 hours of consciousness which tests your senses and captures your mind.*” (Adams, 2004)

The city design of City 17 also starts telling the storyline, in *Half-Life 2* we can notice how an environment helps with storytelling.

“*Public service announcements, private conversations, and the actions of characters around you, whether part of the Combine or simply waylaid citizens, create a stifling and threatening feeling that City 17 has become some sort of elaborate prison.*” (Adams, 2004)

When playing the game most of the players note that they felt the openness of the story. The more you play the storyline the darker it gets. When publishing *Half-Life 2*, publishers made sure they set the requirements in a way that won’t affect the players. Combat and the entire world-building of *Half-Life 2* are considered one of the best by players as well. But every player would agree that what makes *Half-Life 2* so good it’s the storyline and how connected players feel to Gordon throughout the journey. And also how designers did a great job with creating a supportive environment for the storyline.



Figure 26 *Half-Life 2*, Valve, 2004, City (Adams, 2004)



Figure 27 *Half-Life 2*, Valve, 2004 (Adams, 2004)

Now it's time to talk about the newly released *Resident Evil 4 remastered (RE4)*. This is not a new game as the name suggests, hence most of the player base played this game before. Resident Evil series is one of the well-known and loved horror game series. *RE4*'s combat system is nothing new, it's a classic shooter with different types of zombies that were created by a parasite. On *RE4*, the main quest line is taking care of Ashley.

"Many of the original story beats remain intact, down to specific dialogue lines." (Cuevas, 2023)

In low-rated games, players mentioned that the repetition of quests can end up feeling flat. In *RE4* it can be argued that losing Ashley and finding her is a repetitive quest element, but the way it is installed in the storyline makes the game not feel flat. Again, it can be argued that at its core we are just killing zombies till the game is over, but none of the players complain about this purely because of the storyline.

"Resident Evil 4 is like riding a rollercoaster that's careening off the rails to crash through a row of spectacular haunted houses." (Ogilvie, Resident Evil 4 Review, 2023)

While there is only 2 main things you do in the game; saving Ashley and killing zombies, *RE4* executes them in its storyline well and creates an creepy environment. Due to the environment design, even though the game is quite linear, player feels like they are venturing around the world.



Figure 28 Resident Evil 4 Remake, Capcom, 2023 (Ogilvie, 2023)



Figure 29 Resident Evil 4 Remake, Capcom, 2023 (Cuevas, 2023)

The last game review we will investigate is *Metro Exodus* from the Metro series. The game is located in Moscow after a nuclear war destroyed it. Since the surface of the earth is not habitable for humans and can cause serious damage to their bodies, the residential areas are in metro connections and stations.

“The game begins in familiar surroundings—the shattered, radioactive ruins of Moscow and the labyrinth of tunnels beneath it.” (Kelly, 2019)

Our character does go on the surface to travel to other stations, but we don’t spend much time outside. Like *RE4*, *Metro Exodus* has a repetitive combat system as well but with its storyline and how much players connect with the character, it becomes a memorable and distinctive game among post-apocalyptic first-person shooters.

“With a storyline that sidesteps the supernatural themes of its predecessors in favor of focusing on a more affecting human experience, and level design that affords you significantly more freedom without giving you too much room to relax, Metro Exodus feels like the full realization of this series’ potential.” (Ogilvie, Metro Exodus Review , 2020)

Compared to other games in the series *Metro Exodus* allows players to venture between the path and scavenge. But it is still very much a linear game, and a player cannot stay on the surface for more than a set amount of time.

Similar to the low-rated games, with professional reviews, developer comments, and Steam comments, we can list the similarities players enjoyed.

High Rated Games Review Summary

- * The story is interactive.
- * You can mostly make choices, even when the storyline is linear it allows players to make some kind of choice. You can mostly shape your character’s personality and your choices have consequences.
- * Roleplaying mechanics are well written.
- * The politics of the games are well-written.
- * Side quests are well-designed and add to the storyline.
- * Players explore and enjoy the designed world.
- * Open-world elements also add to the storyline.
- * There are DLCs and other additions to most of these games.

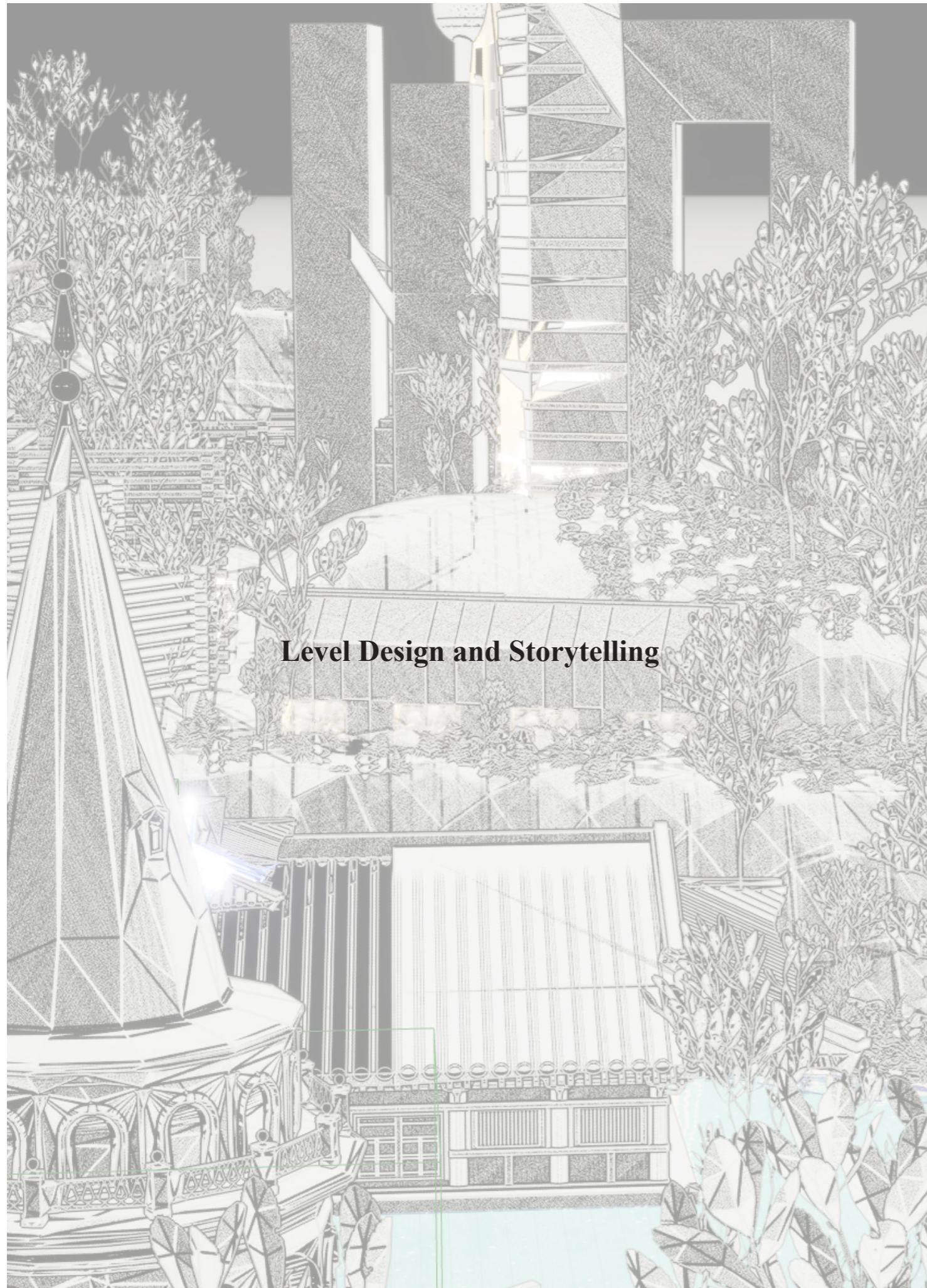
First, we need to acknowledge that all the mentioned games have their problems, especially when it comes to game mechanics. Not all players enjoy all the games, and the reviews are based on the percentage of player base. The games that were picked and used had reviews based on gameplay rather than technical issues. The most obvious difference is the storyline when we look at the comparison between low and high-rated games. It seems like when players enjoy and interact with the story, they tend to give it a higher rate even though they had problems with some of the mechanics. Players also enjoy experiencing the storyline with the world’s design elements such as the structures and nature. They like being able to understand the world, characters, and story fully and they like to role-play in a way that would fit in the fictional world. Now that we established a post-apocalyptic game players likes to enjoy the storyline with non-repetitive elements, we can look into how level design affects the written story.



Figure 30 Metro Exodus, 4A Games, 2019 (Kelly, 2019)



Figure 31 Metro Exodus, 4A Games, 2019 (Kelly, 2019)



Level Design and Storytelling

An important part of storytelling for video games is creating an interactive and interesting environment for the players. The environment created for the players needs to be memorable and complement the narrative of the game while helping the player with orientation. There are four tools designers use to create this effect. First one we will talk about, is they create landmarks to help players.

“Landmarks help with both creating more memorable experiences and helping the player navigate your world. Even for a single shot, it can be important to guide the eye of the viewer.” (Buttiens, 2022)

From the previous analysis, we can easily say that high-rated video games have noticeable landscapes inside the game. And they use it to navigate the player.



Figure 32 Dying Light, Techland, 2015, Chapel of Resurrection



Figure 33 Fallout New Vegas, Obsidian Entertainment, 2010, Sierra Madre Casino



Figure 34 Half-Life 2, Valve, 2004, The Citadel



Figure 35 Resident Evil 4 Remake, Capcom, 2023, Salazar's Castle



Figure 36 Metro Exodus, 4A Games, 2019, The Volga

All the high-rated games make sure these landscapes help players navigate the world while giving the players an understanding of how long it passed or what happened in that specific world. These areas also give players a destination point and give them small hints about what will happen in the story next. Landscapes in these games are also balanced out well and stand out to ensure they will gain players' interest.

Another tool for creating the world is setting a mood for the story to be felt by the players. The elements placed in the world need to assist the main narrative.

“It can serve as a motivation trigger for the player to get invested. It’s also a great way to enrich the environment without compromising the level design and additionally rewarding attentive players.” (Buttiens, 2022)

Again, like the previous point we can observe that most of the environments in the high-rated games do a great job of setting the environment for the story to stand out for the player. But let’s take *Resident Evil 4 Remake* as an example. In the first chapter of the game, Leon (the main character) must play in the village part of the map. When the player arrives in the village, the first noticeable element they see is a cathedral and the houses around the cathedral. The way houses are placed and designed gives the player an idea that the village got destroyed in time, and an important event is about to happen in the cathedral. With the design of the environment, the player gets an idea about the story without reading or listening to it. (Figure 37)

Let us move on to the other tool, creating an emotional connection between the player and the game.

“People are emotional beings, often memories or how much we care about something goes hand in hand with how strongly we connect with someone or something, as well as, how memorable that experience, person, or thing is.” (Buttiens, 2022)

When creating the story it is important to create a bond with the player, without this connection, the player won’t be interested in the main story at all. This time let’s take *Dying Light* as an example. During your gameplay in the environment, it is possible to find added elements that give us an idea of how the world previously looked like. With these little elements, players can get a glimpse of a happier life before the destruction and start getting sympathy for the people who lived there. (Figure 38)

“People can often connect with each other through stories. So try to add hints of things that might let the imagination of the viewer/player take over.” (Buttiens, 2022)



Figure 37 Resident Evil 4 Remake, Capcom, 2023, Village



Figure 38 Dying Light, Techland, 2015

And lastly for the environment to support the main story and tell a story with the environment, the designers need to treat the environment like it's a character. The environment needs to have a characteristic, it needs to show its age and connect with the player in a way that side characters cannot. The characteristics of the environment set the mood for the main story, with the age shown in the environment we can tell how long ago the disaster happened and since the environment is something the player is living in, it gives the game and player to connect differently.

When the player looks at the environment of *Metro Exodus* on the surface, they immediately notice that the air is possibly toxic and the surface is inhabitable right now. Even without any story in the game, when the player is set to discover the surface behind their gas mask, they are immediately hinted that the surface level is way more dangerous than the area they were previously presented with. With the toxic-looking environment and their gas mask, the player instinctively knows that the surface is not the place they will be living during gameplay. (Figure 39)

The age of the environment is one of the biggest hints the player has about the disaster. The way the buildings are ruined, and materials changed the player gets an idea about how long it's been since the area or the object was used. This gives the player an idea about the timeline of the events and the story. Without mentioning any year the player can observe the passing time and put the events in a timeline accordingly. (Figure 40)

While telling the story about a video game the world's urban environment needs to tell the story without texts or any other element. The player needs to feel the written story.

"When designing your game and levels, you want to be telling a story. Now, you can of course do this through quests and several other methods, but a very powerful way of telling story or just explaining the world that the player is in is through environmental storytelling." (Gautam, 2021)

As long as the player feels connected to the world telling a story to them will be easier. They will understand why the characters act the way they are acting, and this will add to the RPG element of the game that players mentioned they enjoy previously.



Figure 39 Metro Exodus, 4A Games, 2019



Figure 40 Fallout New Vegas, Obsidian Entertainment, 2010



Founding City



Founding City starts in a destroyed post-apocalyptic environment, our focus while developing the game was to ensure that players would get the history and the sense of the city that once was located in this area. We wanted to show players the story of the selected architectural elements and present them with the challenge of creating a new city while protecting the memories of the past. The team's main idea comes from the fact that even in our current world, in a non-post-apocalyptic context, architects are struggling with the same issue. With the change in technology and globalization, designing modern buildings in historical city centers is an ongoing issue. Looking at the modern cities we have we can see the struggle, while some buildings fit in their historical environment perfectly and add positive effects on the city for the public with their public spaces and functions some cause issues for the overall community with gentrification or similar concepts. In extreme examples, we can also see that modern buildings kill the historical city's language and characteristics.

"a building can survive some kinds of change or transformation and cannot survive others." (Bacchini, 2017)

We can also notice that the feeling of the cities is starting to disappear with globalization. When we travel in the historical city centers of the cities, we can notice the difference between cultures and the materials they have easy access to, but with the globalization of the world and having easy access to all materials, modern city design is starting to look the same in every country. In the game design, we wanted to address these two issues the players can observe daily. Our goal was to make sure after playing our game, players would have a different perspective on the cities and their design.

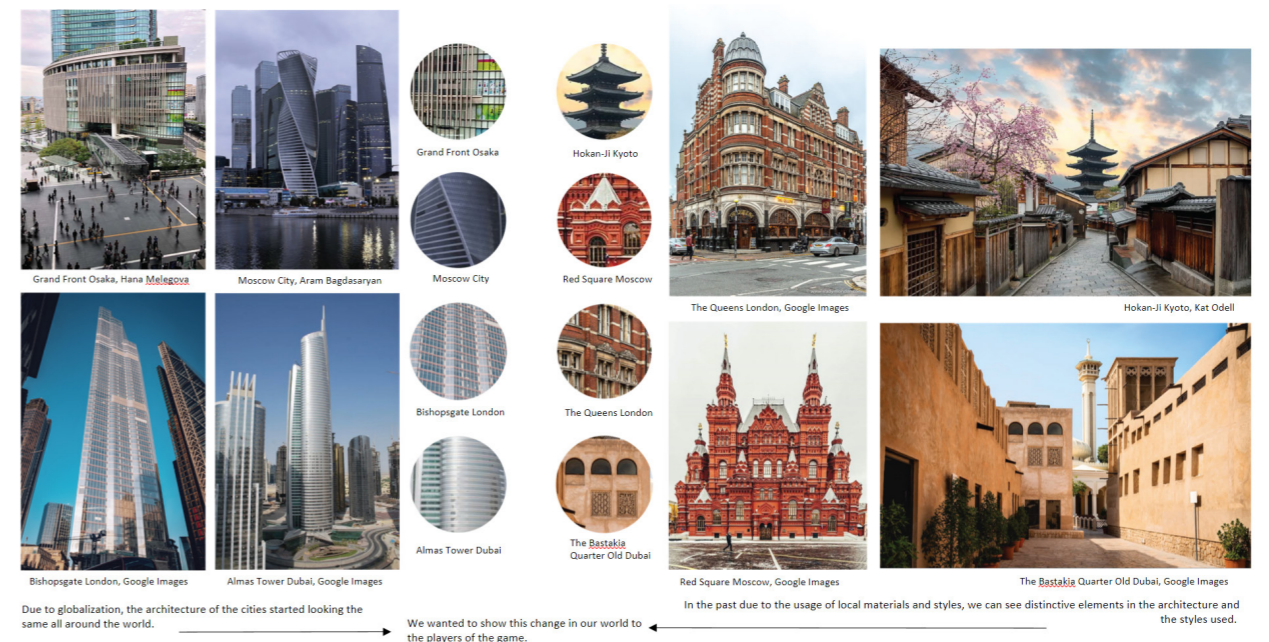


Figure 41, Difference between Architectures

While giving our players a new perspective on how to view and understand cities, we also wanted to show the importance of the heritage of memory of the past. As a result of that, while we are challenging our players with the concept of merging the architectures and cultures, we are also giving them the memories and past of the buildings they are completing from their ruined state. With these memories, players will have an idea of the part of the imaginary environment we created with the cultural buildings of our world. As mentioned before in the research, the story of the post-apocalyptic environment is important for the player. It changes how they perceive the world and how they connect with it. With the memories we put for each building, we plan to create this experience. When players are spawned in the city, the first thing they notice is the merge of three cultures: Mexican, Turkish, and Chinese. Our main goal is to make the player feel the diversity of the buildings we placed and understand how the world before them had a mixture of cultures. The story hints we placed, will give the player an idea about what kind of people lived in this ruined area. With their knowledge of the world, they can also guess what kind of daily life the residents of this city had. Their first experience with the environment is an equal distribution of the three cultures, after the first level, the next level's city starts to be shaped by their decisions. Just like a real city, we wanted players to experience the effects of design decisions and the importance of context.

As mentioned before, the team decided to give the players an idea about the backstory of the buildings they are supposed to be fixing. When the player fixes a building, a memory about that building spawns, when the player finally collects the memory of the building they enter a sublevel to observe the building as it was before it got destroyed by the event that wiped out the world. While I think the team found a way to express the building and give a little backstory about it, in my opinion, the game lacks the general storytelling of the world. The story behind what happened to the world, in general, to get to the current stage is missing. And if we refer to the research done the game misses a lot of the storytelling elements and will struggle to wake any emotional connection with the player. The overall mood we get from the environment is a non-safe atmosphere with buried buildings and plants growing from the ruins of the city. The natural elements show the player that the environment is safe for exploration, but the air quality feels a bit off due to the colours we picked for the environment. While these elements give the player an idea about what happened inside the world, we don't support this with a proper storytelling element. Which will cause the players to wonder. While this sometimes results in a curious speculation cycle, in this game's case this won't be the issue and will end up causing confusion between the player and the world.



Figure 42, Founding City, JAN, before gameplay



Figure 43, Founding City, JAN, after gameplay

Another important point the game is missing is the hints of the life inside the city before the apocalypse. Since the design of the game is focused on architectural elements and buildings, the team spent most of their time on the design of the individual buildings, but while walking inside the game world it lacks the sense of humanity. While the buildings say humans were living inside of this city before the apocalypse, due to the lacking detail around these buildings we fail to understand the social structure and the life inside the city. One can argue that the city before the apocalypse had a dystopian structure and the individuality inside the city was minimal, the team still failed to support this or any kind of storytelling on this issue. The cultural aspects of the buildings the team picked hint at the presence of previous life but it is depending on the player's knowledge about the existing countries. The team did not give any information of any sort. With the sublevel system, the player gets an idea about the individual buildings and their history, especially their place in our current world but as a general concept in the world-building, the player only gets assumptions by their imagination. The game fails to give any proof for what they believe happened. As proved before in the research, the player base of post-apocalyptic games does not like this type of approach in the game.

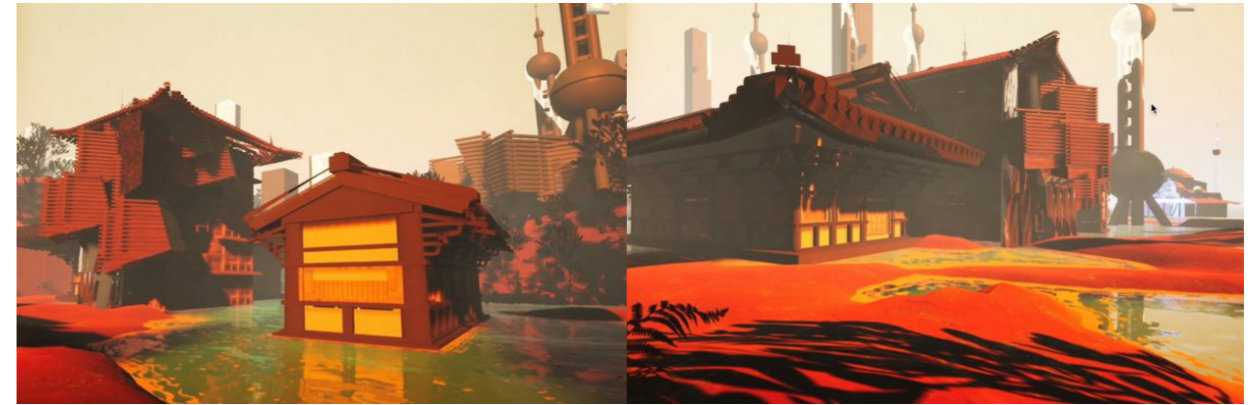


Figure 44, Founding City, JAN

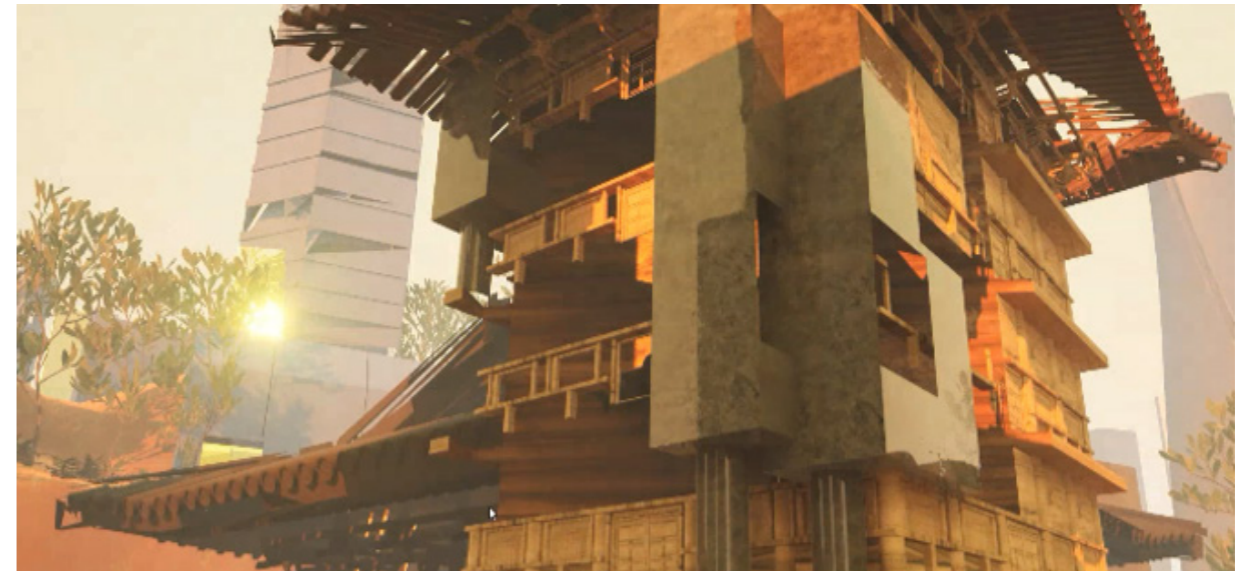


Figure 45, Founding City, JAN

Other important aspect mentioned in the research, character building, as mentioned before the team focused on the building aspects of the game instead of the story of the game. The game is played in first-person view and in an objective sense we don't get any idea what the character is thinking or what their backstory is. The only clear goal is the player wants to save the memories of the past while building a liveable city for themselves. The goal of the player is to complete this ruined city and figure out the best way possible to merge the modern building pieces with the past. With the memories, the player collects the story of the buildings and tries to protect them on the final level they created. But other than that we don't feel any connections to the character we are playing. The world also feels alone due to the lack of side characters and personalities.

All of this is caused by lack of time in the development process, the game is missing important storytelling parts and cutscenes. I strongly believe if the team could add cutscenes in the game to tell the story, the player would have a better understanding of the story of the world. Despite all of this, the game still offers the player the freedom of choice and gives the player the complete freedom that's offered in the post-apocalyptic world design. The player is free to create their world inside the only boundary the team put, which is the character's main goal of protecting memories. The player still has the option of creating a radical building inside of the ruined area and completely changing how the past building is observed. They are not bound by any constraints on how they will fix the historical building, they can use a Chinese building to complete the Mexican building or even mix everything all together. But the decisions the player makes will have consequences on the next level. For example, if they only use Turkish buildings to complete one level, on the next level all they will get as piece buildings will be Turkish buildings and the game will only have 1 style from that point. The team gave the player freedom of choice but also showed the players the choices they made will have consequences when it comes to creating their city. We previously mentioned that most of the player base enjoys this approach in post-apocalyptic worlds.

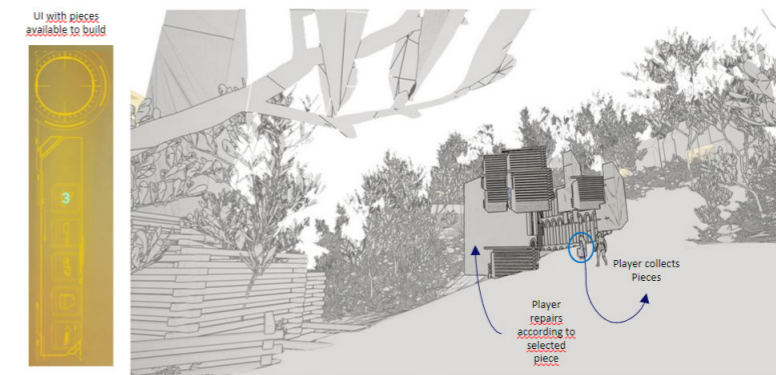


Figure 46, Founding City, JAN, Collecting Memories

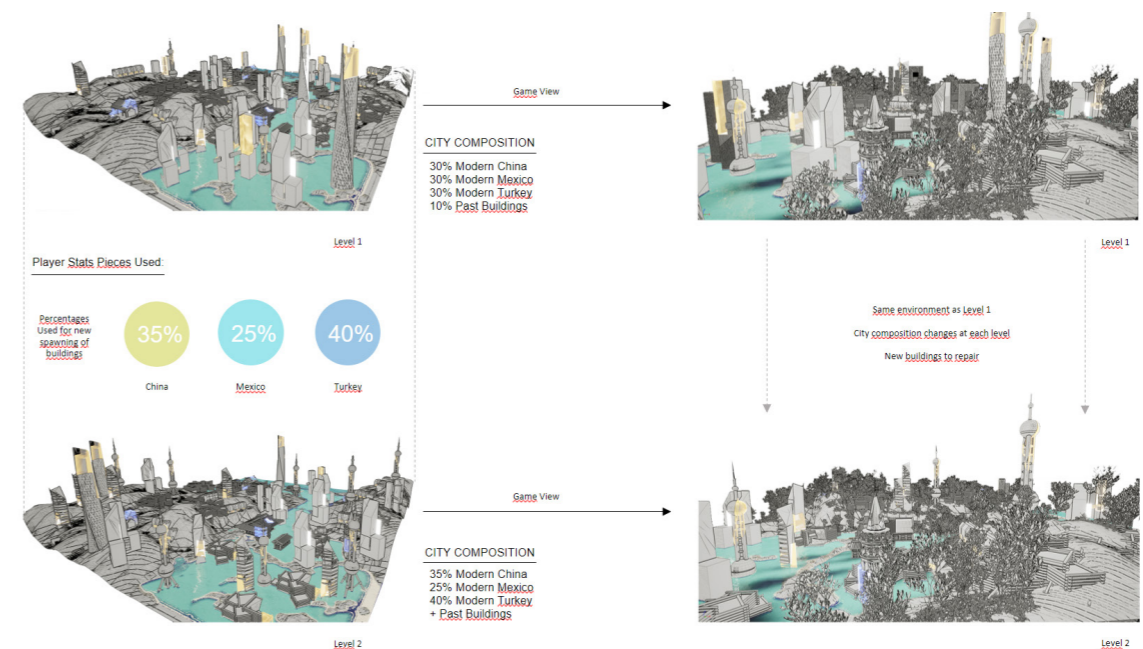


Figure 47, Founding City, JAN, Consequences



Conclusion

This research shows that in post-apocalyptic world design in games, the storytelling and the feel of the environment design affect player satisfaction on an important level. The players of post-apocalyptic worlds want to feel connected with the world and the characters of the world. Since the methods of world destruction are limited, they want an original story so that they will feel connected. Players also expect post-apocalyptic storytelling to allow them to test their morals and show them the consequences of their actions inside the game. Videogames allow players to test their responses on situations they might not ever experience, on the post-apocalyptic genre this also becomes the opportunity to create their world with their ideas. But without proper storytelling, the players feel they are missing the opportunity to giving morally difficult decisions in their game. They want to be properly involved in this world's story and decide according to the morals of the character they are playing, they want to feel what the character might feel in those situations. The expectations of the player from a post-apocalyptic game is to be fully involved and the best way to do this is to present the player with multiple levels of storytelling. The main story needs to be supported by the world design, little details, and the interactions the character has inside the game, both with the designed world and the side characters that were created for the player.

In my team's game design, the storytelling element of our world is still in its beginning stages. It is not lacking and can be felt by the player due to the environment and buildings. The player even gets a bit of backstory of the world from individual pieces, but the overall world design and story still need to be developed. The environment and mood on its own don't present the player with a full backstory of the world. Since this is mainly a building game and the team had a limited amount of time, the story of the game is hinted at but not fully developed. On a building game scale, it can offer an interesting experience for the player and test their limits on understanding the city and how to create an effective design depending on the context. But when it comes to building an effective post-apocalyptic world, it is missing many elements on the storytelling level. In the next stages of development, the team can add a general story and give the players an idea about how the world got destroyed in the first place. Then add small details like artwork, toys, or anything that hints at human life in the area to the environment design. In another step, the past buildings that players need to redesign and complete can have interior designs and players can observe it on the sublevel. Maybe specific stories on how the buildings got destroyed can be added. With all this, the team can add small cutscenes to provide the player with enough visual storytelling and support the game's existing story. In the last stages of development, the game also needs more collectible elements to encourage players to find these hidden stories that were added to the environment.

This research does not talk about every aspect of creating an effective story and world for post-apocalyptic games. It only investigates the effect of storytelling on players and what players enjoy in post-apocalyptic worlds. But it does not go in further along with how to create an effective story for them. In the future, this can be investigated with high-rated games and some other examples which we know have good stories, like *Nier Automata*, *Horizon Zero Down*, etc. The research is missing on how to create a story and what is the process. In video games, as mentioned before in the research, there are multiple ways to support the written story. These well-reviewed games mix all the storytelling methods in a way to create a connection with players. While this is mentioned in the previous chapters, how they do it is still missing. Another part that this paper won't talk about is how the story affects players in an emotional way. While it is mentioned that story makes players empathize with the characters of the game, it does not look into how it actually does it. Games use multiple tools to make sure they feel a connection with the character they are playing, in this research these methods are not mentioned or investigated.



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