Environmental Storytelling in Video Games:

Exploring its use in Game Development and Media

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Abstract

Environmental storytelling is the practice of placing items within a scene of a show, or a level in a game, with the intent to aid the plot, or to include smaller sub plots within the medium. Environmental storytelling is intended for consumers to investigate and decipher the meanings of how the items are place, but in many cases, it is a small percent of consumers who teach their own interpretations to others. My goal was to decide whether environmental storytelling is necessary to tell a good story in games and movies. To do this I wanted to clarify and elaborate on what makes a story good, then discuss consumer interests in show production and game development, and then demonstrate how well common consumers can interpret environmental storytelling by comparing them with other interpretations. Using these, I will decide whether environmental storytelling should be implemented in digital mediums focused on storytelling such as television shows or story focused video games.

Introduction

Stories exist as worlds within our own, and the method of crafting these worlds is constantly changing and evolving. One of the things about storytelling that changes the most often is the methods in which they are told. The oldest stories were shared orally, then when writing came along those stories were often written down as their own interpretations (Warnes). In the last few millennia stories began to encompass artworks and performances into the fold, which came with many twists and changes to storytelling. However, more recent mediums have been said to have created a debate on whether they really fit into the traditional idea of a story or narrative (Ulas 76). It is quite common for video games to rely on stories and narrative qualities, but they add in the aspect of human interaction, which makes it difficult to classify them (Ulas 76).

While it's challenging to classify them, it's not hard to recognize narrative aspects in video games. Their stories are often told through a series of dialogue trees, quests, and clever level design. The use of level design to tell the story is often referred to as environmental storytelling. This type of storytelling is rooted in the use of literary devices, but implemented in ways that feel more natural for visually intensive formats, such as paintings, television shows, or video games.   Using set and level design to tell parts of the story helps reinforce the plot for consumers without breaking immersion. Environmental storytelling has become an important area of focus in game development, so I think it is important to take a step back and question how important it is in the eyes of consumers, and to storytelling.

To an extent, the term environmental storytelling is self-described. In simple terms, it is using the setting of a show or video game to tell or aid a narrative. Environmental Storytelling often shows up subtly, often only revealing the full plot to folks with a knack for analysis and investigation. Examples usually show up as items placed carefully within a level or scene, which hint at less obvious aspects of the story, or tell their own story about a location within a medium. It functions similarly to foreshadowing and in some cases symbolism. More direct examples in games often tell players general info about the world or location and can be used to encourage certain methods of gameplay. The overall point of environmental storytelling is to help the consumer understand the narrative aspects and subplots of a game or show.

I have always questioned the value of environmental storytelling for a couple of reasons. One big reason is that it requires decent investigative skills to recognize, on the internet there are many popular videos of people analyzing game levels for others to watch. That genre of video has always made me question whether most people were getting much out of environmental storytelling themselves or understanding it secondhand. A second reason is that environmental

storytelling costs money to include in a game, and oftentimes games may be released with software issues and can lack in content. These games are basically unfinished, but the result still looks professional because that design aspect is easier to fake. Some of that money may be better spent on testing, bug fixes, and general quality assurance. However, game development has a lot of aspects to it, so there are many more factors to be considered before deciding whether environmental storytelling is a worthwhile investment.

This topic is close to me because I am a lifelong gamer, and plan to pursue game development as a career. I want to see if the average video game consumer has learned anything from environmental storytelling, and if they can apply their knowledge to recognize it themselves. Most discussions on this topic tend to lean towards environmental storytelling as an artform without general consumers kept in mind. Even when it is discussed about how gamers respond to Environmental Storytelling, it often seems that the average gamer is not diving that deeply into it on their own.

Storytelling and Narratives

For a system that has been around since before written history, storytelling has changed tremendously. One of the biggest changes has been digital medias and formats. They have allowed for the use of visuals as a method to tell a story. To effectively understand the value of Environmental storytelling, we must first understand storytelling. The important parts to understand are why we like stories, the tools and ideas used to tell stories, and how storytelling fits into video games.

Understanding why we like stories can seem like a deep undertaking since many aspects of stories have to deal with more abstract ideas like morality, philosophy, and ideological messages. However, there are clear, practical reasons we like stories as well. The most obvious reason we like stories are entertainment. The ability to tell stories gives us a way to take a break from our daily lives and immerse ourselves in someone else's story rather than our own. It lets us imagine another life, one where we do not have to fear failure, but just anticipate what happens next. It also gives us the opportunity to pass that on to others, either as writers, performers, or artists, which can add a special purpose to our lives. Stories are also a tool of education. They are often used to introduce moral lessons that those before us have already learned. These moral lessons can seem more abstract or difficult to interpret, but many are clear and concise lessons about ways to think or act. Stories have cultural significances too. Stories passed on through generations "often became central to the identity of the storyteller's culture" these stories often include religious beliefs and cultural norms (Warnes 3). There are also many cultural stories that play off the same general plot that use one's own culture to teach them instead. Storytelling also can affect people's outlook on the future. It allows us to imagine the world as it could be, for better or worse. In this way it can affect our daily lives, encouraging us to take chances or prepare for disappointment. Overall storytelling has various uses in our lives, which makes it an important tool to change parts of our lives in a clever way.

It will help to review how stories are built, and characteristics that make them interesting. Basic aspects of stories are their structure, these are usually described as the plot or narrative of a story. Narratives can be described as "a sequence of related events that structure a story" (Ulas 76). This means that a narrative relies on sequential order upon each retelling. The story becomes itself when writers employ elements of literature to bring a narrative to life. The tools

used to make a story more interesting are literary devices. Literary devices often improve stories because they help convey emotions and draw parallels to real human situations, rather than just recounting the events as they happened. These types of literary tools help immerse the audience into the world of a story.

Storytelling has not always been a big part of video games, early video games were not advanced enough to have a strong story, or to tell the story in game. Hardware limitations stalled the inclusion of stories because games could only have so many data, and graphical processing was still simple. Advancements within the last 20-30 years have allowed for storytelling to not only be important in games but allowed it to be the primary focus of many games. Increased data storage has allowed more content to be pushed into a game, which made room for storytelling to fit in. Advances in graphic processing has allowed for new ways to include storytelling such as environmental storytelling. Game based narratives come with their own set of differences, but combining many techniques allows them to function similarly to traditional literature. One big difference is the ability to predetermine the way a story will be realized, unlike a book, a game will have player interaction as a key part of the medium (Ulas 80). This imparts a certain level of freedom that does not exist, which means the story will not always be the same because games are often non-linear in nature because players are unpredictable. However, there is still plenty of room to build narratives within the choices a player makes, which allows for a story to progress with the player and tailor the narrative to their choices. However, as stated earlier they manage to perform many of the same tasks that other narratives do. One function of stories is to by imparting knowledge or lessons onto the ones hearing them (Kocurek 2). This is done through "careful engagement of the audience through the deliberate construction of meaningful narrative" stories that follow through with this concept are often most effective at teaching their

audience (Kocurek 2). Stories also rely on the audience to imagine that they are someone else (Kocurek 4). The way this is done is often through immersion. Writers use strong imagery to keep a person's imagination immersed within a story. directors, and game developers can use vivid visuals and audio sequences to engage the audience. Games have a unique way to immerse their players, they are able to show their players changes based off of interaction .this makes it easier for people to learn and understand the lessons being imparted onto them because they can see their actions and consequences as if they are their own (Kocurek 4). Unfortunately, there are aspects of games that can break immersion in a bad way, software issues such as bugs can break immersion, and even break the game entirely. Despite these problems there are still many games that invoke lessons and emotional responses much like literature does. In the context of environmental storytelling, video games can used to invoke those emotions with intense visuals much like other artforms do (Bourgonjon, Vandermeersche and Rutten 6). When combined with the greater narrative of a story environmental storytelling works to aid the narrative and develop deeper plots within the game.

Ludologists vs Narratologists

There has also been some debate whether video games should be treated like traditional narratives (Ulas 76). I found that multiple articles that referenced a debate between two groups, "ludologists" and "narratologists". The bulk of this debate came in around the early 2000's as advancements in tech made games focused around storytelling more likely. Ludology is a relatively recent word, which can be construed as the study of video games. In the context of this

debate ludologists are said to be people who believe that game development should not focus on narratives and should not be treated like literature (Frasca 1). The other side, narratologists are to believe that modern video games function as narratives and should be treated as such when analyzing or discussing a game (Frasca 1). Upon first inspecting these arguments I found them somewhat compelling but misguided because it relies on a strict definition of what narratives are. As I investigated this narratologists vs ludologists debate I found an article called "Ludologists love stories, too: notes from a debate that never took place" this article was by Gonzalo Frasca who was a notable ludologists who helped coin the term ludology (Frasca 2). Throughout the article Frasca debunks the debate, as the debate itself never really seemed to happen. The debate was more so a set of observations from each group that were loosely connected, but no strict sides were not taken (Frasca 3). Most people studying games at the time recognized that not only were games capable of being a method of literature, but most games around the time were merely scratching the surface (Atkins 154). Ludology was never supposed to be against stories in games, but it was just not the focus of ludology (Frasca 2). The article also acknowledges a lack of narrativists, none of the people that were commonly quoted to be narrativists, never really took a particular position. Instead, many observations on each side were exaggerated and speculated upon, which ended up creating a controversy that had very little weight. I felt it was important to discuss this debate and its misconceptions because the subject of discourse heavily relates to storytelling in games. Out of the material I read that is related to this debate, I found that I agree most with Barry Atkins. In *more than a game the computer as a fictional form* by Barry Atkins he asks, "Are game-fictions capable of being more than a game?". He believes that they are, but like traditional fiction there needs to be careful consideration in how they are written for the games, and a better understanding of how the game should be "read", rather than

just experienced (Atkins 154). This plays into environmental storytelling because it seeks to have a greater mode of audience analysis, the player must evaluate a scene or level to understand the deeper parts of it.

Consumer Cares

It is also important to acknowledge what consumer interests are when it comes to environmental storytelling. In this section I will be using a small survey with 17 participants. My preliminary questions included questions about hobbies and general knowledge of the subjects.

Participant Hobbies

Of the 17 participants, most of the participants considered themselves either a gamer, a reader, or a TV viewer (Urchison). I asked this question because it was important to gauge whether participants were generally familiar with story-based media. I also
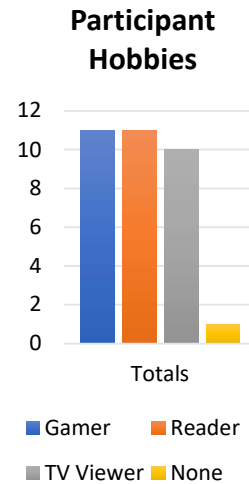
Figure 2 (Urchison, Consumer Survey on Literary mediums)

Interest in Literary Analysis

■ Yes

■ No

Figure 1 (Urchison, Consumer Survey on Literary mediums)

wanted to gauge if participants look for info on the series outside what is stated directly inside their own medium. The next question I asked was whether participants enjoyed literary analysis, 8 of the participants claimed they enjoyed literary analysis, while the other 9 said no or sometimes enjoyed it. Environmental storytelling relies on basic analytical skills to function effectively, so seeing if consumers even care for it is very important. The next step in understanding consumer trends is understanding how they experience literary analysis. I found that 11 of my participants (68.8%) have seen content online analyzing their chosen hobbies. This means that it is likely that most audiences are not doing a lot of analysis, but rather receiving it through others. I also asked whether participants had heard of environmental storytelling, 10 particpants said that they had never

heard of it before this survey, and only 3 were sure they had heard of it. From this question I drew the

assumption that the term isn't familiarized among gamers, and even less so outside of gaming. My next

set of questions where about aspects of TV shows, and which were most important for the show to be

enjoyable. All participants agreed that a well written plot is essential for good show. They also

showed that creativity is important, and most regarded soundtracks as essential.

Relatively few considered well designed set as important to the overall quality of a TV show. It

is also important to note that predictable plot structure in this context is not a bad thing, it is
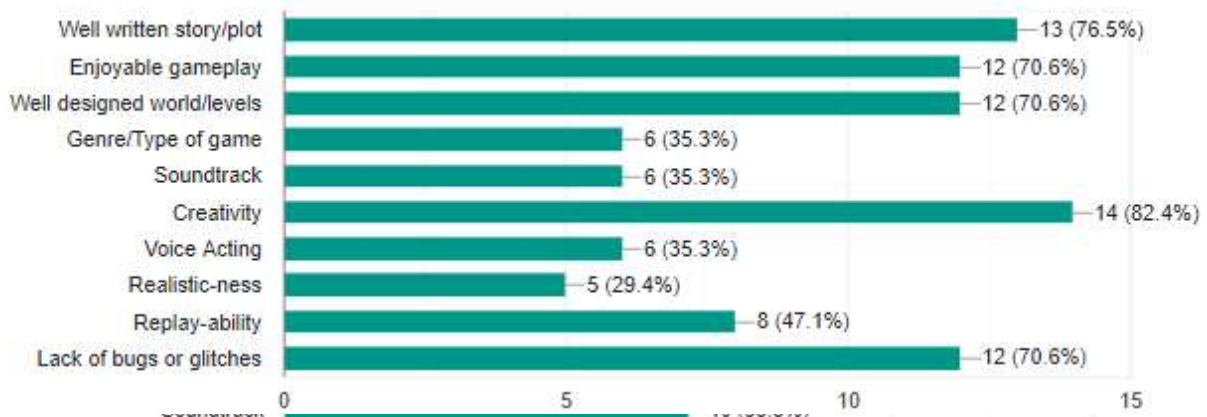
Well written story/plot	—13 (76.5%)
Enjoyable gameplay	—12 (70.6%)
Well designed world/levels	—12 (70.6%)
Genre/Type of game	—6 (35.3%)
Soundtrack	—6 (35.3%)
Creativity	—14 (82.4%)
Voice Acting	—6 (35.3%)
Realistic-ness	—5 (29.4%)
Replay-ability	—8 (47.1%)
Lack of bugs or glitches	—12 (70.6%)

Figure 4 (Urchison, Consumer Survey on Literary mediums)

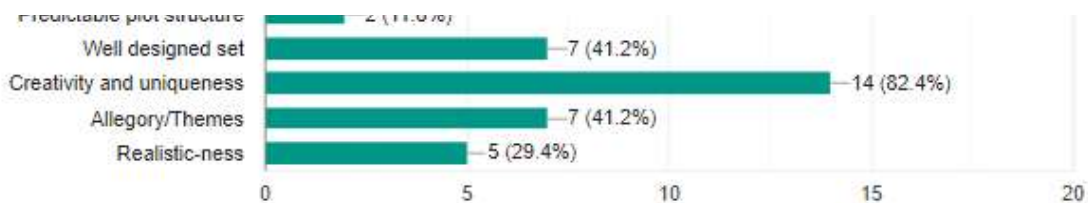|	
Predictable plot structure	—2 (11.8%)
Well designed set	—7 (41.2%)
Creativity and uniqueness	—14 (82.4%)
Allegory/Themes	—7 (41.2%)
Realistic-ness	—5 (29.4%)

Figure 3 (Urchison, Consumer Survey on Literary mediums)

referring to ways that writers hint and foreshadow the future of the show, rather than meaning a

boring plot. I also asked whether participants enjoyed when shows include hints about the plot in

the background. This is a common way shows foreshadow or reveal information in a natural

way. Nearly unanimous, 16 of the participants said yes, and 1 said maybe. Clearly most people

want a unique and well written narrative for their shows. I also asked a similar set of questions

more tailored to video games as a medium.

Again, creativity and well written plot are still considered the most important. As the format of games tend to be more complex than television, there were a lot more factors included such as lack of bugs and enjoyable gameplay that were important as well. Well-designed levels are also considered more important in games, which differs from the responses for television. Replay ability was also a somewhat prevalent factor, which means that a player will be getting more for the money they paid. That can sometimes be difficult to incorporate with games that include a lot of narrative elements, as the experience can feel repetitive. A plot does not necessarily need environmental storytelling to be good or engaging. However, seeing as it is used as a tool to improve a game or shows story, I think it is safe to say that it is in the best interest of consumers that it is used when appropriate.

Scene Analysis: Fallout 4's Railcar Bunker

In this section I will start go over my analysis of scenes from a particular location in the game "Fallout 4", after my analysis is reviewed, I will compare the ways that lifelong gamers, and more unexperienced gamers see the two scenes. This will help realize the effectiveness of environmental storytelling on its own, and if being exposed to environmental storytelling in the past makes you better at analyzing a scene. I also want to clarify, that while I do have pre-existing knowledge of the game, this was the first time I looked at the location with an analytical eye.

Figure 5 (Bethesda Softworks)

This location is a semi-subterranean bunker that has been fashioned out of an old railcar and other scrap metals. The first thing to acknowledge is the nature of the bunker, people do not build bunkers unless they are hiding from something outside of their control. The people who built this bunker must have been at risk from some type of largescale danger, such as extreme weather or threat of foreign attack. Upon entering the bunker, you see what is pictured in figure 5. There are various empty cans scattered along the ground, this means that people were living

here at some point for an extended period, they were also likely running out of food hinted at by

the empty cans and empty refrigerator sitting in the background. There is also a poster for what

Figure 6 (Bethesda Softworks)

looks to be some sort children's toy in the background so there may have been children living in

the bunker. This next image figure 6 is seen as the player explores the bunker. In this image the

most striking thing is the late couple upon the mattress. A few things to notice about the couple

is that they died embracing each other, whatever happened to them likely was not violent. They

also are all bone at this point, so they must have died quite a long time ago. In the background

there are some posters, both are American propaganda signifying that this takes place in

America. The posters are also very related to war, one depicts Uncle Sam pleading for the

viewers help from the ground, so the bunker was probably put together during wartimes. There is

also a small firearm sitting in the background, so the inhabitants must have needed to protect

themselves. To the right we can also see some storage, of what looks like tools, hardware, and

other supplies. From that I can tell, someone who lives here must have been handy with tools and may have built the bunker themselves. (Urchison)

Figure 7 (Bethesda Softworks)

In this finale image figure 7, it is hard to tell what the image is portraying at first. Upon first inspection the area is cavernous, unlike the rest of the bunker which appears to be made of metal. There is a pair of candles, and alongside each there is a toy. It appears to be some sort of memorial of some sort, perhaps for children who have passed away since toys are part of the display. The possibility of graves is further enforced by the handle of a shovel that is poking out on the right side of the image. The candles are still emitting light, so at first glance this appears to have happened recently. Again, considering that the couple in figure 5 are bones at the time the players enter the bunker. It makes me suspect that the candles are not indicative of the timeline following the bunker, but rather are remnants of a need for good lighting in the level. (Urchison)

Overall, there are some final assessments to be made. There was clearly an American family who lived here during or after wartimes. For some reason or another the children likely passed away before the parents since the graves had to have been dug by someone. If the parents died from starvation, then the world outside the bunker must have been bad when they died since they were not able to get help from anyone. (Urchison)

For this set of participant assessments, there were a variety of observations and claims about the bunker. In group one there are participants who have been gaming for a long time, and in group 2 are those who do not game or picked up gaming recently. This is to help distinguish when certain observations were only made by one demographic. For figure 5 many noted the general disarray and uncleanliness of the bunker. One participant from group 1 went as far to suspect that the place looked as though it was "scavenged for supplies" (Urchison). Participants also noted that there were empty cans scattered along the floor, but there was no mention of what that implies. Multiple did recognize that there was still power being brough to the bunker, due to both the light on the left and the fridge light. In figure 6, all participants recognized the skeletons, but only one made speculations on them. A participant from group 1 suggested that the bunker must have been attacked in the night, which resulted in stolen food and gave reasoning for a lack of struggle. Participants from both groups recognized the patriotic posters and guessed that there may have been a war recently. They also took note of the gun, but there were no further comments on it. In figure 7 the participants took note that it was underground and listed each individual item. No participants recognized that they were graves. One participant in group 1 went as far to guess that it was "an area where children would play and try to escape from the world around them" which aside from the children's toys being acknowledged, seems like a stretch considering other aspects of the image. After each participant looked over all the images,

I asked them questions about what the images imply, and most participants relayed that there was

some sort of war or event to hide from, and they also recognized that a family lived there. Over

all participants understood general info about the bunker, but participants who have been gaming

for a long time were more likely to try and piece together narratives. This part of my assessment

shows that environmental storytelling can have trouble telling narratives to the general

consumer, but prior experience with environmental storytelling may help people uncover these

more discrete narratives. (Urchison)

Scene Analysis: The World of Fallout 4

In many cases the world of a game is meticulously designed to try and tell the player

information about the world and its history. The following images are of the world in fallout 4,

these will be used to see if the design of the game world effectively tells the player crucial

information about the world. The overall setting in fallout 4 is Massachusetts after a nuclear

apocalypse, where there is no longer any large government, and modern luxuries have ceased to

exist for the common man. The people living there are small pockets of survivors, who build

their lives up using the rubble of a demolished America. The nuclear event in fallout occurred in

Figure 8 (Bethesda Softworks)

October in the year 2077, the game Fallout 4 takes place around 200 years after the various missile strikes. (Urchison)

Figure 8 is wide shot of the world in Fallout 4, the first thing participants noticed was the overall gloominess of the landscape, how the world looks bleak and desolate. Participants also saw that there were abandoned highways that were no longer taken care of. One participant also recognized that the background looked as though the area may be bordering an ocean since the far background was flat looking. Another participant also suggested that the place could have been bombed. I thought all these observations were very good, they were close to identifying that the government was not maintaining the infrastructure, as well as recognizing that the area is a coastal region, which is an important aspect of Massachusetts' history and culture. The suggestion about the bomb was also good, because much of the destruction in the area can be blamed on nuclear missiles. (Urchison)

My assessment included multiple images like figures 9 & 10. These types of decorations were left in abandoned and destroyed residential areas. This was likely implemented into the game to help convey that whatever occurred to make people abandon their homes, happened in October 2077. During the assessment only one participant realized this was a theme, and explicitly realized that whatever happened to the world happened in October of that year. I found these results to be a bad sign, the info in these images were relatively straightforward, especially when the images were gathered and presented together, but most participants still did not recognize what the game was trying to tell them. (Urchison)

Figure 10 (Bethesda Softworks)

Figure 9 (Bethesda Softworks)

Figure 11 (Bethesda Softworks)

Figure 11 depicts the mains street of an American town. The main thing to take note of are that

the patriotic banners that indicate that this is in America. All participants concluded that the game takes

place in America. However, participants also made multiple good observations that I had not thought of.

For example, one participant noted that the town looks empty, as though it had been abandoned in a

hurry. Another participant also took note of the sandbags placed around the street, then suggested that

the town may have had a military occupation of some sort as well. These are both important

observations because naturally people flee the area in a hurry when alerted of an incoming attack, and

there is further evidence throughout the town that indicates a post-war occupation of the area. I think

that this shot effectively conveyed a lot of info, and I was impressed by how participants picked apart

each part of the image. (Urchison)

Figure 12 (Bethesda Softworks)

Figure 12 depicts a small human enclave. In this image we can see that people are still surviving

in this rugged world. Their homes are built using scrap and other items that have been scavenged to

create a place of comfort. We can also see that people were still able to hold on to certain practices such

as domesticated pets. All participants took note that there was a man standing in the doorway. Most

recognized that the building here was made of scrap parts. Some participants even said that the people

living here seem as though they are living in a situation like the great depression, since the hut is built in

a similar style to what were called Hoovervilles during the great depression. The observations on this

image were decent. Even though no one said it directly, the observations surround the idea that the

people in Fallout 4 are often struggling to get by and survive.

Overall, I found the world design of Fallout 4 very effective. Most participants understood the

most important aspects of the setting, and some had even made deeper evaluations I was not

expecting. When it comes to world design, it is very important to include details that tell consumers know more about the world in a natural way.

Scene Analysis: The Gas Station Adventure Time

This set of images is from the episode "Bonnibel Bubblegum" from the show *Adventure Time*. The show takes place in a post-apocalyptic setting much like fallout 4. This episode in particular follows one of the shows supporting characters who is having a flashback to earlier in her life. The character is exploring a dilapidated gas station that has been abandoned. Inside the gas station there is a lot of hints towards the history of it.

Figure 13 (Hanna K. Nyström)

In fig 13, we can see a character riding towards a gas station on some type of animal. We can also see some sort of ornament that is hanging off a sign off to the right, this is an early hint that people may have been living here at one point (Elk). Participants first pointed out that the building looked like a

gas station, one participant mentioned that the sign reminded her of an old Texaco sign (Urchison). Only

one participant mentioned the skull decoration but did not elaborate on what it could mean. (Urchison).

Figure 14 (Hanna K. Nyström)

In figure 14 there is a lot more to consider. To the left of the doorway, there is a small poster of

an explosive cloud, likely indicating that nuclear destruction could have taken a toll on the world. There

are empty cans beneath the poster, indicating that the inhabitants were running out of food. On the

wall to the right of the doorway we can see a message inscribed "Back soon! xoxo" with another

message "Please come back" beneath. On the right, drawn on the counter is a twist of an old saying

"Love didn't conquer All". With these in mind we can already start to put together a basic story of this

location. The people living here were likely running low on food. One of the people decided to risk

themselves to go out and search for food when the others were unaware. After a while, the person must

have gone missing, which prompted the message pleading for their return. Eventually the other,

perhaps their romantic partner or close family accepted that they were not coming back and wrote that

message on the end of the counter. (Elk)

When participants viewed figure 14, they elaborated on who defunct the building is. Even

stating that it looked as though a bomb went on. Most participants continued by listing of various

features of the house, including the messages. After talking about contents of the image, one participant

mentioned that "Hope seemed low" for the inhabitants and assumed that they may have been a couple or family (Urchison). None of the participants elaborated any further about possible stories. (Urchison)

The rest of the images I interviewed people on followed the same story, all participants noticed the various highlights of each image, but made very little assumptions about the story. I think that the nature of television makes this type of storytelling less important. The real focus of this episode is on the character exploring the gas station, but it is not obvious enough to the viewer. It still makes for a very interesting and well thought out scene. The show does not need environmental storytelling to be good, but it can aid the story in certain ways.

So, is it Worth it?

Environmental storytelling has been very helpful in the game development industry. It serves valid purposes to further the narratives of a game and does it effectively. It is better at conveying general info, but some consumers can decipher stories and narratives. Consumers want good stories which means that it should always be considered for certain games. However, it is not always appropriate to make it a focus, there are many cases where game development studios need to focus on making a well-rounded and polished product. It has also seemed to have helped make gamers and TV viewers more analytical. I think overall it has a valid place in game development, but it should not be overused, or focused on when a game has problems that require attention. This also applies to television shows but is less of a problem because storytelling is the biggest focus in shows, they do not need to account for as many issues that could make the show un-enjoyable.

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