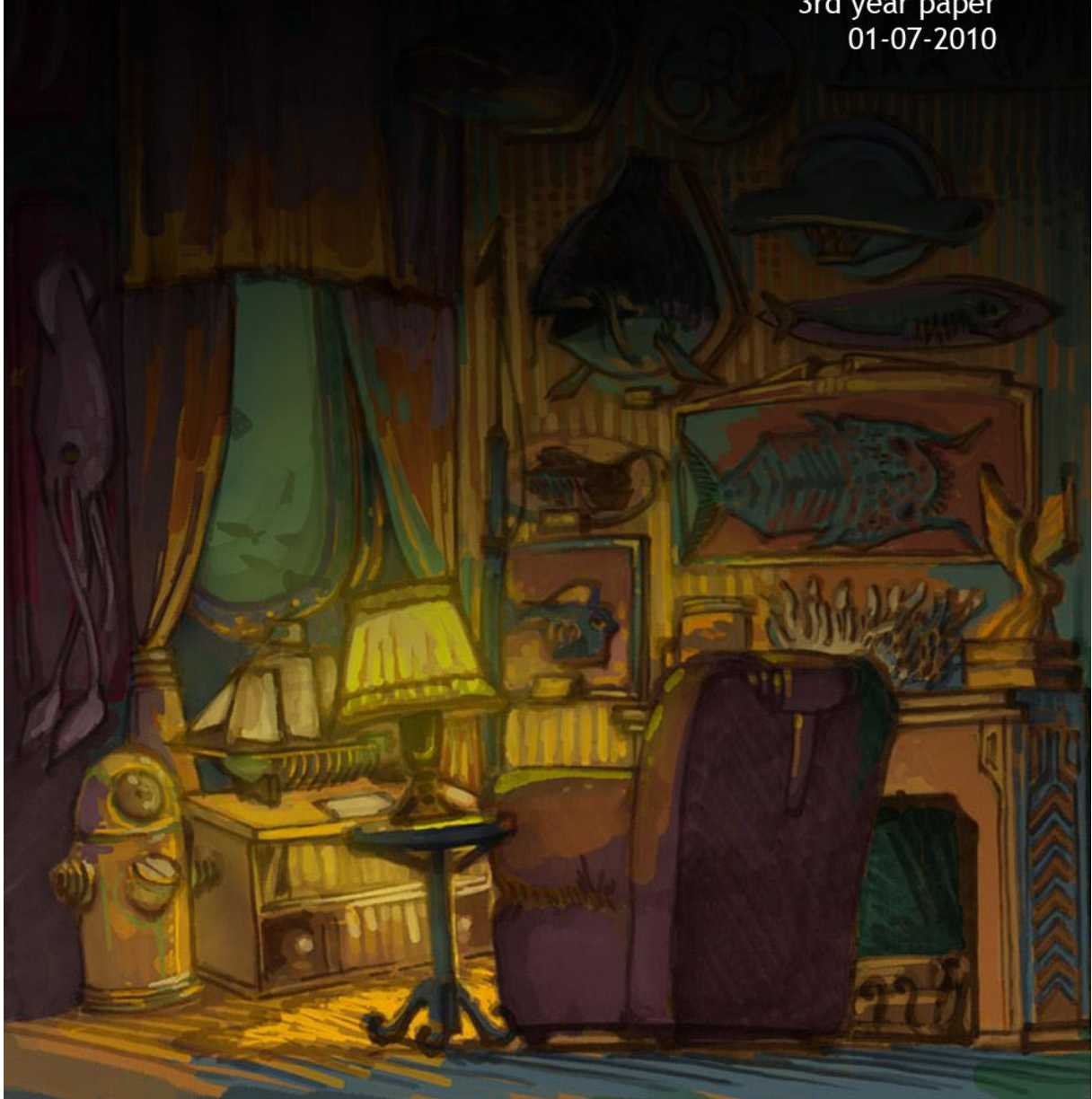


Let the world do the talking

an exploration of environmental storytelling

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Abstract

With this paper, I have attempted to uncover ways in which gameplay and narrative in interactive entertainment can be blended together in such a way that it does not take the player out of the experience. To do that, I have looked at many articles and lectures by industry veterans such as Harvey Smith and J.J. Abrams to learn what their thoughts on the matter are and what they found are good ways to present stories in games. The general trend they all seem to agree on is to embed narrative elements in the game world, and let players explore and discover it for themselves.

There are several different ways to approach this, as I have illustrated with examples taken from modern games, as well as my own experiences. By applying the outlined tips and tricks in this paper, I hope that I, and those who read this paper, may become better storytellers, and end up making better and more immersive games because of it.

Keywords

embedded narrative, environmental storytelling, letting the player figure it out, exposition, setting, mystery, consistency, history, immersion

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Introduction

“If you can’t tell the story IN the game, that’s probably not a story you should be telling.” – David Jaffe, *Bonus Round #403*

Storytelling in games has long been a much-debated issue. Luckily we are finally arriving at the point where developers accept and acknowledge that blending narrative and gameplay together can create a much more powerful experience than each of the two separately. Some genres are better at this than others, and some might not even need it at all - I would hate to have to deal with a story in *Geometry Wars* for example; sometimes, you just want to shoot things.

But if you do delve into the world of narrative design, what then is the best approach? Because simply tacking a story onto an existing game, or trying to make a fun game out of an existing story is not the way to go, and more often than not results in bad games.

Unfortunately there is no simple answer to this question, and perhaps there never will be, but there are some tricks you can apply to at least form a more coherent whole out of your story and your gameplay. So in this paper I will focus primarily on the question: **How do you effectively communicate game-related information to the player in a non-intrusive way?**

And when I say *game-related information*, I mean information pertaining to the game, so this can be both plot-oriented and mechanics/goal-oriented. And *non-intrusive* as in not breaking the immersion or game flow.

I will outline some of the problems presented when trying to get story information across to the player, some of the solutions used by modern games, the opinions of several designers, writers and directors on how best to tackle this issue, and I will close out with a few case studies of games I have personally been involved in.

Johnny Exposition

"METAL GEAR?!"

- Solid Snake, *Metal Gear Solid*

Subtlety is a useful skill; not only in everyday life, but also when designing videogames.

A guilty pleasure of the videogame industry (as well as in film, literature and comics in fact) is using a character as an *exposition fairy*. The purpose of **exposition** is to provide background information and inform the player/viewer/reader about the plot, characters, setting, and theme. All too often this means a throwaway character will suddenly pop up at a critical plot point, launching into a monologue to explain the current state of affairs. This is usually referred to as an **infodump**. A good example would be the scene in every James Bond movie where the villain explains the minutiae of his evil plan.

Suffice to say this is not beneficial to player enjoyment. Gamers especially have short attention spans, so if you present them with a 45-minute cutscene (we are looking at you, MGS4...), they will lose interest - and you will lose a player.

One of the additional disadvantages of cutscenes is that it creates **ludonarrative dissonance**. Which means as much as that gameplay and story are so different they become separate parts. Again, *Metal Gear Solid* is guilty of this, showing the characters doing amazing acrobatic twirls and leaps in slow-motion, which stands in stark contrast to the slow-paced sneaking gameplay that is core to the series.



A ham-fisted way some games try to bridge this gap is by making the cutscenes interactive, what is known as **quick time events**. But for many games this results in nothing more than a "press X not to die" button. Mapping the performed actions to the logical buttons can help - like if the A button is used to jump ingame, map any twirls or leaps during quick time events to the A button also. This creates consistency. But you are still taking away control from the player. Only if you have so many special actions that you could not possibly map them all onto the control scheme - such as **God of War's** takedowns, and basically everything you do in **Heavy Rain** - it is justified to use QTE's.

To break up the monotony of exposition, writers may use **Parrot Exposition**, a literary technique that especially **Metal Gear Solid** is guilty of using - that is why it is sometimes also referred to as '[Metal Gearing](#)'.

Parrot Exposition attempts to mask an infodump as conversation. One character intentionally plays dumb in order to explain complex terms and plot points to the player.

Kyle: "So she knew about the hotel, huh?"

Jeff: "You practicing to be an echo chamber or something? "

- Hotel Dusk: Room 215

David Hayter, the voice actor for Solid Snake in Metal Gear Solid, once joked that he had the easiest voice acting job in the business because almost all of his dialogue consisted of repeating the last word another person said with a question mark at the end.

Although hardly perfect, Parrot Exposition is already a step in the right direction. Instead of presenting you with the information via a popup or menu screen, it is integrated in the game world. It does not work for everything though, because a character saying "press A to climb that ladder" still kind of breaks the Fourth Wall.

But exposition through dialogue still has one big problem: you have to sit and listen to it. No matter how entertaining the dialogue might be, at some point you are going to want to get on with playing the game.

So then the question is: are there ways to present information to the player *while* he is playing the game? The answer is **yes**.

The writing on the wall

One of the first games to pioneer an alternate method of exposition was **Doom III**. During the game, you could find **audio logs** stowed away in lockers and dark corridors. These were the personal accounts of employees of the space station before Hell (literally) broke loose. Their anecdotes provide interesting insights into the history of the game world, and the events that led up to the start of the game.

Bioshock and several other games continued this trend with great success. Finally you could absorb information while still looting cash registers and shooting enemies! It keeps players in the flow. Although it still slows their progress a little, because they will be more hesitant to walk into a combat zone if they're still listening to an audio log.

But what about gameplay-related information? As mentioned previously, letting characters tell the player what button to press still breaks immersion a little bit, so we are almost always appointed to placing this information on the GUI. Or are we?

More and more developers are finding ways to integrate the GUI with the game in interesting ways. **Far Cry 2** for example has no ingame GUI whatsoever, all the information is presented via ingame objects, like an actual physical map you have to hold up to look at. Similarly, **Dead Space** displays all GUI information on the spacesuit of the main character as a 3D hologram.



My favourite example however is **Heavy Rain**. The controls are still presented to you as icons on the screen, but these icons actually interact with the 3D world. They swirl around the characters, and their appearance changes depending on the mood. For instance, as you are about to cut your own finger off, the icons start trembling to indicate the fear your character is feeling - and it actually succeeds in awakening these feelings within the player as well. I do not think I have ever experienced anything so dreadful in a game.



The problem is that this method is quickly becoming cliché. Whenever information has to be integrated with the game world nowadays, it is either via audio logs, emails, books, notes, posters, graffiti, holograms floating icons or ambient dialogue.

"We had ideas for embedding email, until we realized that reading email was fundamentally not much fun."

– Erik Wolpaw on Portal, *GDC 2008*

The palette is limited right now, but it will grow over time as writers and game designers work closer together. As **David Jaffe** points out in episode 403 of the *Bonus Round* podcast: it works, now let's make it better.

And that is where the setting comes in.

Let the world do the talking

Harvey Smith of Ion Storm fame (Deus Ex, Thief) gave an interesting lecture at this year's GDC. He talked about **environmental storytelling**, and specifically how you can use the game world to create a sense of place and time, history, mood, and an indication of the desired player actions. In literature this is referred to as **including**, which is the opposite of exposition. Including is the process of gradually revealing information about the world and its inhabitants, leaving it to the player to piece it together. This requires a more active involvement on the player's part, increasing their investment in the game. This method is often used by RPG's and MMO's to introduce players to their world, and then leaving it up to them to explore it further.

Including is an effective way to make your world believable. It creates a sense of mystery, which raises questions, which increases immersion.

J.J. Abrams, director of LOST and Star Trek, talked about this at TED 2007. He says:

"Mystery is the catalyst for imagination."

– J.J. Abrams, *TED 2007*

That is why psychological horror movies are scary and gore horror movies are not. Because there is no mystery. Nothing is left to the imagination. So mystery is an important factor in creating interesting experiences.



This is also where Bioshock 1 failed according to **Ken Levine** of 2K Games.

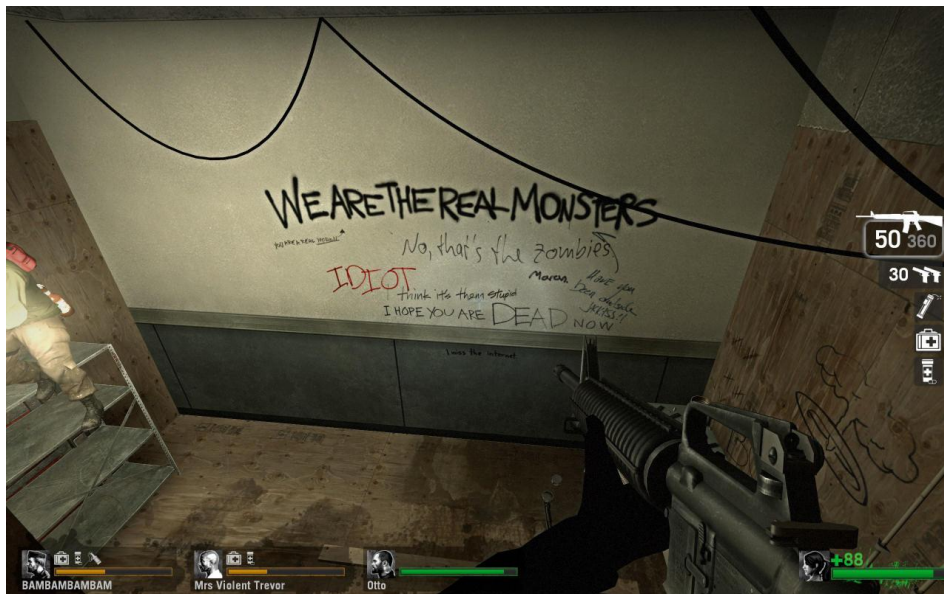
He compares the matter to a helium balloon. The helium represents the questions the game raises, which keep the the balloon (the player interest) afloat. When the helium reduces (a question is answered), the balloon starts dropping. So as a designer, you have to inject helium into the balloon at the right times to keep it afloat. But if you go too far and raise too many questions, you will start losing people (LOST).

So **raising questions** is an important part of environmental storytelling. It will motivate the player to seek answers, and it avoids long stretches of exposition. The objective is to **make the player think they figured it out**.

"The concept behind this is the *Law of Closure*. As humans we have an innate need to categorize and fit visual elements into a larger framework. To do so, we draw conclusions."

- Harvey smith, "What Happened Here?" lecture at GDC 2010

Valve software is very proficient at this. They routinely use the 'writing of the wall' technique to provide the player with directions as well as background information. In **Portal**, the objective of each puzzle is printed on the wall, and since the game is set in a research lab, this does not seem out of place. And in **Left 4 Dead**, graffiti left by others survivors sets the tone of the game world, without ever forcing players to look at it if they do not want to.



"Your first job is to present your audience with the opportunity to answer the question "Where am I?" for themselves. Self-discovery can be even more enjoyable than having the story spelled out for you in the opening credits."

- Don Carson, for *Gamasutra*

Don Carson is an American illustrator who used to design rides for Walt Disney theme parks. One of the most important parts of this job was to create a compelling world for each ride.

"One of the trade secrets behind the design of entertaining themed environments is that the story element is infused into the physical space a guest walks or rides through. In many respects, it is the physical space that does much of the work of conveying the story the designers are trying to tell. Color, lighting and even the texture of a place can fill an audience with excitement or dread." - Don Carson, for *Gamasutra*

So it is not just graffiti or audio logs that contribute to the history and the feel of an environment, it can also be the **lighting, prop placement, sound**, or even the **costume design**. All these things can be used to reflect the mood you are trying to set.

They can also be used to **foreshadow** danger or areas of interest, like a trail of blood leading into the bathroom stall, or a twitching corpse hanging from a fence to indicate it is electrified. And even a certain arrangement of boxes in a large room to indicate they can be used as cover during a forthcoming firefight. In these cases, the environment *reflects* both narrative and gameplay clues – like now would be a good time to reload that weapon.

Using existing imagery as a foundation for your world helps players put it into context. Everybody knows what a haunted house might look like, so recreating that environment immediately triggers certain memories within the player. It can help you establish a world more quickly.

But we can take it one step further. Building the history of a game world is not just up to the developer, the player can contribute as well.

I see what you did there

“The story that players draw from a **play experience** is always more **valuable** than the one we write for them.”

- Trent Polack, *The Cutscene Crunch*

Essentially, we could propose that most story-driven games actually have *two* stories – the history of the world leading up to the start of the game (like for instance a Star Wars game already brings a truckload of history with it before you even get the disc out of the case), and the history *the player* creates by playing the game. Even in linear games, this is still unique to every player, since we can safely assume no two players traverse through a game in exactly the same way. They might encounter the same setpieces, but the route they take and the items they use will always differ.

This process is known as **dynamic history making**.

And now that breakable objects and decals have become more and more common in modern games, players can actually shape the environment to reflect their history. A simple example would be the bullet decals and blood stains you leave behind after a firefight. If you return to the same area later, they will remind you of that firefight. History is created by merely playing the game.

Some games lend themselves very well to this process. In **Red Faction** you could spend hours digging tunnels with your rocket launcher without ever advancing the plot or even leaving the room you started in. And games like **the Sims** and **LittleBigPlanet** are basically built for players to create their own narratives. They give you the building blocks, and you shape the world the way you want. The narrative **emerges** based on your actions.



However, giving the player too much freedom to build their own history can be counter-productive to your narrative though.

"Any story must be true to its own inner laws."

– Ernest Adams, *Three Problems for Interactive Storytellers*

For example, in **GTA IV** you play as Niko Bellic, who is escaping a war-torn, violence-ridden past to establish a new identity in America. But the gameplay tells the story of a complete sociopath who gets in firefights at every street corner, runs over pedestrians for no reason, and has sex with prostitutes in the back of a car right before taking a girl out on a nice date. Rockstar partially attempted to fix this in **Red Dead Redemption** by simply not allowing John Marston to visit a brothel. But that is not the way to go. In many ways, **GTA III** did it better, by simply not giving the main character a personality - or even a voice- at all, thus he was unable to do things that were out of character.

It's debatable whether the *silent protagonist* is really a good solution, but it can be very effective in facilitating identification with the main character in Role Playing Games or First Person Shooters. It is easier for players to imagine they themselves are part of the game when they have an empty suit to slip into.



Case Study: Drakeneiland

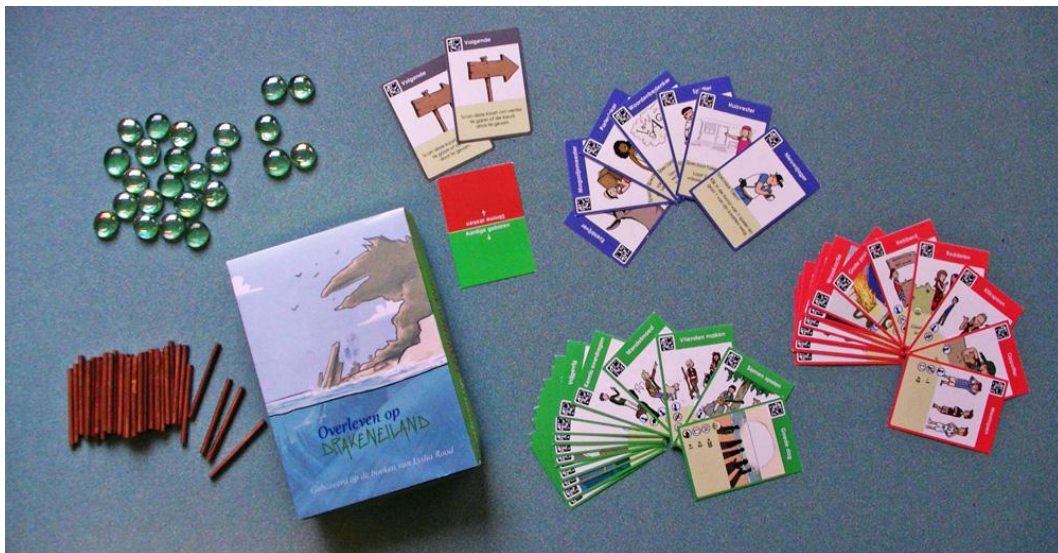
To reflect on the proposed methods in this paper, I would now like to delve into some personal experiences on recent projects I have worked on.

In my third year at the **HKU** game design college, I and several fellow students were given the assignment to create a game for the children's books series Drakeneiland by writer **Lydia Rood**. Our only restriction was that it was not allowed to contain *any sort of story*. The objective was for the children to create their own narratives, thereby exploring a different side of the Drakeneiland franchise. And all that in eight weeks.

It seemed like a daunting task at first, but as we got familiar with the world of Drakeneiland, we realized the core of the stories is **social interaction**. Drakeneiland takes place on a Greek island where mischievous children are sent after they do something bad. The island is completely devoid of adults, so the children have to establish their own society. It is very *Lord of the Flies*, but without the violence.

Barred from building any kind of pre-existing narrative, and hampered by limited technical resources, we decided that a card game was the best fit. It would allow children to build their own narrative within the context of Drakeneiland.

It also includes a digital companion built in Adobe AIR that tracks player stats and provides narrative context.

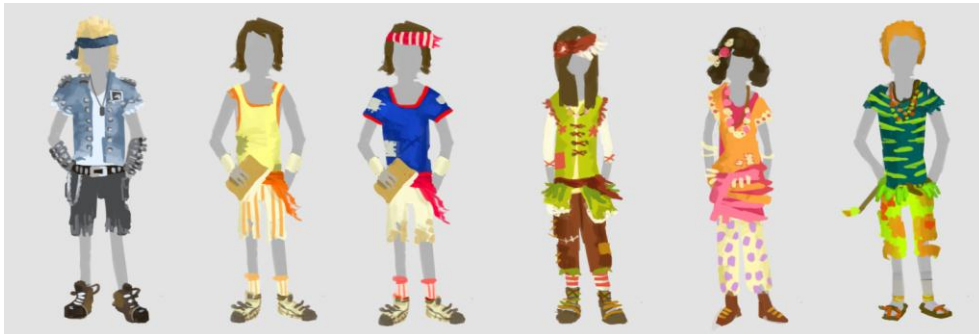


Basically how it works is you choose one of the available professions (each child on Drakeneiland has a profession to keep their little economy going), which gives you a special talent. Next, you can earn money and use that to pay for cards which have either a positive or negative effect on you or the other players. By playing cards you have to try to collect as many Drakenpunten (Dragon points) as possible before the end of the game.

Aside from the points, our digital companion also tracks stats like karma. Most cards give you either positive or negative karma – unbeknownst to the players. These stats are revealed at the end of the game, and the player with the best ranking receives an additional Drakenpunt.

Because of the limitations of a card game, we had to get creative in building the game world. Players really had to feel like they had visited Drakeneiland themselves after playing this game. So we spent most of the project designing the world as described in the books. But instead of simply copying the world as presented, we decided to take it a step further and create a *history* for the island and its inhabitants.

Let's face it: there is simply no way the children's clothes would be as spotless at the end of the summer as they were when they arrived. So we added little rips and tears and little mending patches to their clothes. In addition to that, we wanted to differentiate between the *cultures* of the three main settlements, so we varied the colors of the children's clothes, and added region-specific accessories to their wardrobes such as flowers, bracelets and headbands.



To give the players a comprehensive view of the island, we decided to give each profession its own iconic background in the digital companion, and one iconic character associated with it. This way, you get the essence and aesthetic of the island and its different regions, without having to explore it in-depth. For the cards, we focused more on events that could occur on the island and the social interactions between characters.



Lydia Rood was very supportive, and in the end told us that we had recreated the world of Drakeneiland exactly as she envisioned it in her head. Which is an incredible feat considering we had never heard of the franchise at all eight weeks earlier.

Case Study: TijdTripper

During my internship at Monkeybizniz I worked on a casual adventure game called TijdTripper. The objective of the game is to retrieve items missing from a museum by recreating the events that caused them to arrive at said museum in the first place. At the same time, our objective as developers was to teach you about these events so that after playing the game you have an understanding of the history of these items.

Obviously, we couldn't just dump all the facts on you, or force you to read about it; that would have been boring. Instead, we applied some of the tricks outlined in this paper.

We started out with a more traditional adventure game, but quickly found out this required way too much exposition and unnecessary backtracking. So instead we fiercely trimmed the dialogue and opted to go for more arcade-style puzzles. The gameplay relies heavily on cause and effect - the player has to set in motion a series of events in the right order to solve a puzzle.

Now, simply giving the player all the knowledge to solve the puzzle would have been no fun at all. But to ensure they are not completely helpless, we employ **foreshadowing**.

Once you arrive at the start of a puzzle, we try to make it as clear as possible what your objective is from just looking at the scene. The fewer words it takes to explain, the better. Sometimes a little context is inescapable, but we were lucky enough to have a significant liberty in the historical accuracy of our plot, so we were free to arrange elements in ways that imply what should happen next.

Symbolism, color, shape and **animation** also play an important role in discerning which elements are clickable.

All the elements needed to solve a puzzle are contained within the viewport. By playing with the different possibilities, players start to piece together what the correct sequence of events should be. Each element has its own effect, but they do nothing unless triggered in the right order. And once they nail it, the payoff is huge.



In the above scene for example, you are sent back in time to cause the construction of the building that will later house the museum itself. However, a pompous emperor has claimed the plot to build a statue of himself. Now it's your job to get rid of him.

(the solution is: throw ball at bird > bird flies over emperor and poops on his helmet > emperor takes helmet off to clean it > throw ball at sculptor > sculptor drops hammer > hammer knocks out emperor and he falls over > let the big rope guy take a break > other rope guys cannot hold the rope and drop the big rock on the emperor)

We accommodate for trail & error by assigning a **timer** to each element. So if the player gets the sequence wrong, everything will reset after a few seconds and he can try again.

"Time pressure makes people think that something is a lot more complicated than it actually is."

– Kim Swift, project lead on *Portal*

Players are challenged to put together the pieces themselves. We hope that after they finish the game, they will have obtained a reasonable mental picture of the events that make up the history of the museum and its collection. If they wish to delve further into the matter, there are collectibles hidden throughout the game that offer additional information on the witnessed events. They are all short blurbs, and are not essential to understanding the central narrative, but they are there if the player wants more info.

The road ahead

So judging by all this information, we appear to be finding more and more ways to successfully include narratives in games in a non-intrusive way. But as technology evolves, we are getting ever closer to the limits of our current capabilities. Wanting to include multiple endings in a game is all well and good, but every ending takes extra time and effort to make. And even if you have a massive team at your disposal, you probably still will not get much further than maybe twenty endings. To include every possible outcome is simply impossible - with today's technology.

"One of the reasons I was opposed to multiple endings is because this is not a game about A or B. This is a game about one through 1 million, and all those permutations of choice."

– Ken Levine on Bioshock's endings

Luckily the first steps are being taken as we speak. With Kinect, Microsoft is attempting to give players much more freedom of movement in games besides the limited options a controller would provide. And though motion control and voice recognition are still in their infancy, these tools will be the foundation of **procedural narrative**.

True freedom of choice in games, the opportunity to *really* create your own history and unique experience, will only come once the computer is able to understand everything we say and do. A true Holodeck, if you will. But that is still a long way off.

And thank God for that, because, as **N'gai Croal** points out in episode 403 of the *Bonus Round* podcast, what if someone playing Bioshock 5 says 'Eff this, I'm done hanging out down here, I'm going back to the surface.' – your narrative is shot.

Giving the narrative power over completely to the player is dangerous. Because then, the experience of your game depends entirely on the player. And not every player can write as well as the writers at Bioware or Rockstar...

Conclusion

So now we come back to our original query: **what is the best way to effectively communicate game-related information to the player in a non-intrusive way?**

Unfortunately there is no simple answer to this question, and perhaps there never will be, but there are some tricks you can apply to at least form a more **coherent whole** out of your **story** and your **gameplay**.

A bad but unfortunately prevalent way to do it is by dumping a truckload of information on the player via a Non-Playable Character. This is referred to as **exposition**. But exposition has one big problem: you have to sit and listen to it.

In recent years however, several developers have started embedding exposition throughout their game world, with for instance **audio logs**. Now you can absorb information while still playing the game.

But what about gameplay-related information? More and more developers are finding ways to **integrate the GUI** with the game in interesting ways, like **graffiti** on walls and **holograms** in spaceships. The problem is that this method is quickly becoming **cliché**.

That is where the **setting** comes in.

Including is an effective way to make your world believable. By slowly revealing bits of information to the player, you create a sense of mystery, which raises questions, which increases immersion.

So **raising questions** is an important part of **environmental storytelling**. It will motivate the player to seek answers, and it avoids long stretches of exposition. The objective is to **make the player think they figured it out**. Because as Don Carson explains: "**Self-discovery** can be even more enjoyable than having the story spelled out for you in the opening credits."

And it is not just graffiti or audio logs that contribute to the history and the feel of an environment, it can also be the **lighting, prop placement, sound**, or even the **costume design**.

But we can take it one step further: most story-driven games actually have *two* stories – the history of the world leading up to the start of the game, and the history *the player* creates by playing the game. This process is known as **dynamic history making**. And according to Trent Polack, "The story that players draw from a **play experience** is always more **valuable** than the one we write for them."

However, giving the player too much freedom to build their own history can be counter-productive to the narrative. Because as Ernest Adams says: "Any story must be **true to its own inner laws**." This is often a problem for open-world games where players are free to act any way they like, regardless of whether it fits the protagonist.

This can only be solved by true **freedom of choice** in games, the opportunity to *really* create your own history and unique experience. But for that, the computer must first be able to understand everything we say and do. The danger in that however is that the experience of your game then depends entirely on the player. And not every player can write as well as the writers at Bioware or Rockstar.

So ideally, when attempting to marry story and gameplay, you should restrict **explicit exposition** as much as possible to things that are absolutely essential to understanding the main narrative, and leave everything else to **implicit exposition**, by embedding it into your game world in ways described by this paper.

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