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Ask Why: Creating a Better Player Experience through Environmental Storytelling and Consistency in Escape Room Design

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Abstract: The purpose of this paper is to help those designing escape rooms and similar live-action puzzle-based experiences to create more consistent games through applying an “Ask Why” approach. The concept is to embed the challenges in the game along with the game narrative into the environment, using Jenkin’s concept of Narrative Architecture. Designers are encouraged to ensure consistency between their genre, setting, world, and challenges to create a more engaging player experience.

“You’ve entered the Ancient Lair of the Dark Dungeon. You have 60 minutes to escape, as tracked by this digital clock on the wall. To escape, you will have to solve the Scary Sudoku, discover 4 different sets of 4 digit numbers for the 4 padlocks you see in front of you, and then determine the code for the numeric keypad on the wall. If you need help, use this walkie talkie and someone will come into the room to give you a hint. Have fun.”

While the concept of an escape room is an exciting one – players trapped in a space having to rely upon their wits and each other to find hidden objects, solve a series of puzzles, and accomplish tasks to get out in a certain amount of time – the reality can be disappointing, especially when a room has been put together by someone who is just trying to get a piece of the lucrative escape room market but has no passion for designing games.

One aspect that makes escape rooms different from most other types of gaming is the strong connection between the player and the avatar he or she is playing in the game. Unlike screen-based games where there is a separation between the player and the avatar in the game world, in escape games the player and the avatar are the same. Since the player is not sitting back, watching the avatar in the game world, the player is more sensitive to elements in a game that are not consistent with the genre, setting, and narrative. Players seeking an immersive experience can be frustrated facing cognitive dissonance between who they are supposed to be in the game and what it is they are doing in the game.

The goal of this paper is help those wanting to create more consistent escape rooms understand some of the concepts that have been developed over the years in the game design literature and see how these concepts can be applied to escape room design. This advice also applies to those using escape room concepts for puzzle boxes, such as the Breakout EDU movement, that use escape game concepts for educational games in classrooms and museums.

Background and Inspiration

The impetus for this paper started from the author's own experience with approximately 75 escape rooms and participating in online discussions around escape rooms. There is a recognition in the community that many escape rooms consist of challenges that don't make sense in the genre, the settings, or the world in which the game is placed. From laser mazes in Egypt to a Simon-like puzzle with buttons on the walls of a bunker to blacklights everywhere, many challenges exist in escape rooms because of "escape room logic" ¹.

In order to collect some data for this article, I worked with game design students from Wilfrid Laurier University to analyze Breakout EDU games. Breakout EDU is an analog platform designed to allow teachers to create escape room-style games for a classroom. Instead of trying to get out of a room, players are trying to get into a box by solving a series of challenges and opening locks. The Breakout EDU platform is a series of locks and boxes, and once a teacher has the platform, he or she can download games from the Breakout EDU web site, print them out, and use the games in the classroom. We looked at about 40 of the 150 games that were available during March 2016, and found that only about half of the challenges used in the Breakout EDU games made sense within the presented narrative and world. The other challenges were challenges put in front of the players without any reason to exist other than to unlock a lock on a box.

Many of these escape games have design elements that are similar to digital games in the 1990s, where puzzle games like *The 7th Guest* presented players with a setting and genre, but then had puzzles that were not integrated into the narrative of the game. Since this time, digital games have improved in combining genre, setting, and narrative along with puzzles, tasks, and other challenges. Many modern games still have puzzles embedded within them, but they are placed within the world and feel more natural. Schell discusses this transition in digital game design: "This gradual change from explicit, incongruous puzzles to implicit, well-integrated ones is less because of a change in the tastes of the gaming audience, and more because game designers have matured in their skills" (2008, p. 210). The purpose of this paper is to collect advice and models from modern digital game design and apply these concepts to escape room design.

¹ To avoid spoilers for escape rooms when presenting examples, I have generalized challenges from rooms that are still active, used more specific examples from rooms no longer open, or presented information about specific rooms that is readily available.

More than puzzles

“The ultimate goal of the game designers is to deliver an experience. When you have a clear picture of your ideal experience, and its essential elements, your design has something to aspire to. Without that goal you are just wandering in the dark” (Schell, 2008, p. 21).

An ongoing argument in the escape room community is about the role of narrative versus the role of puzzles. Some are happy with rooms with nothing but good puzzles, and others want rooms with an immersive narrative to explore. The debate between puzzle-based games and narrative-based games harkens back to a debate that existed in the game studies field in the late 1990’s and early 2000’s: Narratology vs. Ludology. Narratologists argued that games were primarily story-telling devices and should be considered along other forms of media that tell stories while ludologists focused on promoting games as sets of game mechanisms and play engines where stories were secondary to play (Sylvester, 2013). In game studies, the debate tapered off as people looked to better integrate narrative, mechanisms, and play.

One solution that emerged to the debate between narratology and ludology was to focus on the player experience (Schell, 2008 & Sylvester, 2013). Schell puts the concept of the experience as the primary goal of the game designer. The purpose of the game is to create the experience for the player. Rather than starting with a genre, a setting, a narrative, or a fancy piece of technology, game designers should start with the experience they are trying to create. Once the core experience has been decided upon, then every design decision should be made to move players closer to the experience. If there is a decision that does not move players toward the core experience, then that decision should be questioned, which may then require the core experience to be reconsidered (2008).

The player experience starts with the marketing and booking of the slot of the room, through the customer service and the elements of the lobby, on to the design of the game, the puzzles and tasks, the technology used to support the game, the interaction of the players with each other and with the game master, and finally, to what happens after the game is over. In order to present a good player experience, an escape room facility has to consider all of these issues; however, for purposes of this paper, the focus will be on these aspects of the design of the game itself:

- Genre – the overall category of the general experience of the room. The genre is one of the few things marketed about the room, and guides players as to what overall experience they are going to have (e.g. horror, heist, detective, exploration)
- Setting – the physical place where the game is set. This may or may not be marketed with the genre. The physical set for the game helps the player engage with the setting (e.g. a laboratory, a dungeon, someone’s office, a museum).

- World – the external world in which the game is set. This may include a timeframe, a physical location, a historical event, or a fictional place (e.g. the 1920's, during the Cold War, in an alien-infected space station).
- Narrative – the specific story in this game, establishing the role of the player, their allies, the conflict, the goal, and the antagonist(s) preventing the player from reaching the goal
- Challenges – an overarching term that encompasses the activities done by players in escape rooms. There are typically three types of challenges:
 - Searching, where the players are looking for something physically hidden in the space. Most searching tasks have an unknown end state, so the players are continually searching in the room.
 - Puzzles, where the players are attempting to discover an answer that is hidden within a game-based space.
 - Tasks, where the players are given a set of resources and an end goal, and have to determine and execute the best process to reach that goal. A searching task in a room is when players have a specific goal for their searching, and once that is accomplished, they can stop searching.

A challenge can have aspects of all three tasks; for example, the players may have to locate things in the room, assemble them into a tool, and then use that tool to carry out a physical task.

A method for improving the player experience inspired by the debate between Narratology and Ludology that was developed by Henry Jenkins is the concept of Narrative Architecture, commonly used by the theme park industry to create immersive experiences. The underlying concept as applied to game design is that game mechanisms are embedded in a larger world. Players explore that larger world as they explore the game mechanisms. Rather than layer a story on top, the story is also woven into the space that the player is exploring. As the player explores the world through the mechanisms, they are also exploring the story. It is the player's actions that advance the story, and the player understands the story through engaging with the game design. This concept of environmental storytelling creates a more immersive narrative experience than presenting the story as a layer on top of the game world and mechanisms (Jenkins, 2004). An important strategy in making a consistent narrative architecture in a game is to Ask Why.

Ask Why

The concept of “Ask Why” is simple – a designer should look at each element of the player experience of an escape room and ask “Why is this here?” Each puzzle, task, and item in the escape room should be there for a reason that is consistent with the overall concepts behind the design of the room. The answer can fall into one of several categories:

- *Escape Room Logic* – “The black light is in the room because players like black lights in rooms.” When there is no other reason for an object in the

space or a puzzle, then the default answer is that the players are playing an Escape Room game. There are times when this is inevitable, such as for safety reasons or logistical reasons, such as having certain items marked as “out of play” because they contain the electronics that helps something else work. When possible, escape room logic should be avoided.

- *Genre Expectations* - “The false trails were there because this is a detective game.” This is slightly better than Escape Room logic, but it is still not recommended as the only reason why something is in the game.
- *Setting* - “The black light picked up writing on the wall because this is a haunted room, and the spirits living in this space are trying to convey a message.” This is one way of ensuring consistency in a game. The challenges in the room can be tied into the physical setting where the game is placed and can help the players better understand aspects of the setting.
- *World* - “There is no dial tone on the telephone because there has been an explosion nearby that knocked out phone service.” Aspects of the room can also be used to create moments where the players get a better understanding what is going on in the outside world.
- *Characters* - “The players have a black light because they found the bag left behind by the paranormal investigator sent ahead of them into the space who is missing.” Something that would normally not be in the setting or the world can be there because it is something a character in the story or even the players themselves would bring into the space because of the role they are playing.

Looking at these concepts from the lens of environmental storytelling, answering a question because it is part of the setting, world, or characters would be a better approach than having something in the room because it is there to fulfill a genre expectation or because of escape room logic. Since challenges are the primary way in which players explore an escape room, to embrace the concept of environmental storytelling, the challenges the players face need to be consistently incorporated into the concepts of the setting, the world, and the characters within that world.

Using challenges for environmental storytelling

Lee Sheldon talked about three things that audiences want from storytellers:

”

- Take me to a place I have never been.
- Make me into someone I could never be.
- Let me do things I could never do.” (Sheldon, 2014, p. 11)

A key design strategy is keeping the backstory simple so that players can better understand how the challenges fit within the narrative and the world (Schell, 2008). With a one-hour playtime, escape games don’t have the time to explore an in-depth backstory. “The best solution is to reveal backstory through exposition brought to light during the action of an ongoing story” (Sheldon, 2014, p. 198). By exposing the

players to the backstory through the challenges, then this content can be delivered in small pieces instead of putting it all into a lengthy pre-game narrative.

Each story beat can then be conveyed as part of a challenge. While this may seem to trap the designer into creating linear escape rooms, there are many ways in which stories can be told in a non-linear fashion. The progression through the game is linear to the perspective of a single player; however, their interaction with the story can be non-linear. In fact, having the story broken into smaller pieces that the player can encounter in a non-linear fashion gives the player the agency to feel as in control of the gameplay experience. There can be specific points in the game through which the team must pass, which are useful for pacing and ensuring the players are aware of the larger context of the genre. (Sheldon, 2014).

It is this player agency and control over narrative that can make escape rooms and puzzle boxes different from a puzzle hunt with locks to check answers. If the players are rewarded with narrative for completing a puzzle that is external to the narrative, the player is not truly engaged with that narrative. In this case, the narrative is the extrinsic reward for completing the puzzle instead of building the narrative intrinsically into the puzzle itself. By building the narrative into the environment and challenges, the designer can present clues in each activity to suggest the next possible paths of exploration. The players should have a meaningful reason for taking on a task other than “it’s the next thing to do in the room”.

Salen and Zimmerman, in their well-respected textbook on game design, *Rules of Play*, focus on one important concept in making a successful game: Meaningful Play (2003). For play to be meaningful, the actions a player take have to be discernable, meaning the player understands the result of what they are doing, and integrated, meaning the actions the player takes in the game make a difference. To extend these concepts in creating meaningful challenges for escape rooms, this means that puzzles and tasks are not simply there to be barriers to winning the game, but each challenge has a purpose and is tied into the larger narrative, giving the player a way to find meaning in their actions.

Methods for creating meaningful challenges

There are different ways in which a challenge can have meaning to a player: it can engage with an element of the narrative backstory that has been presented to the player, it can interact with the world in which the player exists, or it can have a direct impact on the player or other characters in the game (Howard, 2008).

Connecting the player into the narrative through the setting

“So, first try to find a way to let the player do it; your second choice is to show it. And finally, your last resort is to tell it” (Skolnick, 2014, p. 57).

The first way that challenges can be made meaningful is by an initiation of the player into the setting of the game (Howard, 2008). Adapting the concept of Csikszentmihalyi's Flow (1990) to narrative development, as players undertake a series of quests, they develop a deeper understanding of the setting they inhabit. If the game starts off requiring too deep of an engagement with the setting, the players may be confused as to why things are happening. If the game does not create the situation for players to get more deeply engaged with the setting, then the player can be forgetful of the role they are supposed to be taking. Finding a balance of narrative and meaning is as important as finding a balance in puzzle design in keeping players engaged.

This process of initiation is one that the *5 Wits* franchise does well. Like with many escape rooms, the *5 Wits* games start with an overview of the rules and a mission briefing video, but to actually enter the game rooms, the players must succeed at some type of challenge designed to get them in the mindset of the genre of the room. This initiation process helps players transition from the real world into the game world and specific setting through a challenge. Once inside, the players establish contact with audio and/or video of the non-player characters that guide them through the rest of their journey.

The challenges can also be used to help develop the narrative. I was working on an escape room concept with a client who wanted to use a Sudoku to have the player discover a series of numbers. Normally, I would advise against using a Sudoku and focus on more creative puzzles, but in an educational escape game, it can be useful to expose students to this type of puzzle. When I questioned why the solution to an unsolved Sudoku from a newspaper would then open a combination lock, the response was that the player's ally wanted to hide the information from the player's captors. I suggested that it would make more sense if the Sudoku were solved, but solved incorrectly, and the incorrect numbers would be the code for the lock. In this case, the player's ally was also a mathematician, so finding the Sudoku mistakes would tie in with the way the mathematician might send a clue that would be overlooked by the player's captors. A side effect of this change is that the puzzle still teaches the concepts of Sudoku, is faster to solve than working a Sudoku from scratch, and is something multiple people can work on together. This also established a narrative tool to use later in the game of the mathematics professor encoding messages through mistakes in numerical messages.

Connecting the player into the fictional world

Another way of creating a meaningful challenge is to have the challenge connect to the fictional world that is outside the game space. By allowing the player to see snippets of the larger world, it can help to set the stage, add to consistency, and provide some of the reasons for things happening within the game. (Skolnick, 2014). Evidence of the larger world in the physical game space can be used to develop a narrative; Sylvester advises that the "world narrative works through the presence or absence of features in the environment which imply some situation or history"

(2013, p. 87). This world narrative can help players understand the social and cultural norms in which the game is set. Physical items, documents, and audio or video logs can convey recent events that have occurred in the space more effectively than a pre-game backstory.

Challenges can help the players see how that outside world is affecting their own game setting, and how what they are doing can have an effect on the outside world. For example, in the *Apocalypse* game from Escape Canada, players start in an office and must work to get a bunker open. While the overall game is 60 minutes, players are warned that the office will only be safe from the outside effects for 30 minutes. If the team has not worked into the bunker by the halfway mark, the players lose the game. This impact from the real world on the game space creates a more meaningful subgoal for the players within the game.

This can also be explored with communications sent to the outside world. A common way this is done in games is with tools like Morse code machines, telephones, fax machines, or a computer (based upon the setting of the game). Players may have to receive and decode a communication, send a reply, and then later in the game, see the effects of sending that reply. This makes the game more immersive for players, and challenges can be constructed that force the players to think about what they would do if they were actually in that situation.

Having a direct impact on the player or characters

A third way of creating challenges that are meaningful is to have the challenges have an impact on the player. If the player has a quest, and to accomplish the quest, the player must overcome conflicts, then having the player work through a challenge to acquire a tool to help with the conflict can make it more meaningful. That tool could be a physical tool, such as a magnet or a rope, or a mental tool, such as an encoding scheme or a new way of understanding something. This is a valuable method for those creating escape room-based games for learning, as each challenge can help the players learn a new skill or reinforce existing knowledge.

A way to make challenges meaningful that ties in the narrative and other characters in the game is to have the challenges either help the allies of the players or hinder the enemies of the player. In a game I created for a historical fort, the players were advising a saboteur as to what part of the fort would be most vulnerable. The fort was aware of the potential of sabotage so had been reinforcing their defenses. The challenges in the game helped the players learn which parts of the fort had been reinforced, which then eliminated possibilities for sabotage. As all of the potential sabotage methods were actual methods of sabotaging military forts in the late 1800s, players learned about weak spots in these defense-based structures, and after playing the game, could go and visit many of the areas in the fort they explored during the game.

Consistency in escape room design

A key part of the “Ask Why” model is consistency. While the challenges may be tied into the narrative, the world, or the players, if there are concepts of the challenge that are not consistent with the escape game, it will take players out of their mental space. Many times, these errors in consistency have come about simply because the designer never stepped back and asked “Why would this exist?”

An important narrative question to consider in any escape room or timed puzzle box design is “Why does the clock matter?” In about seventy percent of escape rooms, the narrative is “escape the room before something awful happens,” (Nicholson, 2015), but in the rooms that aren’t using that narrative, then the designer needs to consider why the players need to finish the game before the timer ends. Instead of having a clock that doesn’t make sense in the world, designers should consider other ways to indicate that time is passing such as an audio track, recorded messages passed on through telephones or walkie-talkies, or other in-game resources that are drained over time.

Consistency within the Genre

The genre of an escape game is the primary marketing point for most games. Since the content of the game is kept secret, the name and images for the game are selected in line with a specific genre. Players signing up for a horror room will expect a different experience than players signing up for a heist room. Understanding and respecting these expectations are valuable to the game designer in creating a game experience that is consistent with the genre presented to the player.

Players will expect to behave in a game in line with the genre of that game. In a detective game, for example, players will expect to have to look for details and sift through clues. In a heist game, players will expect physical challenges such as laser mazes and physical manipulation of props around alarms. As Juul explores in his work, *Half-real: Video games between real rules and fictional worlds*, the fictional world serves to help the designer decide what the player experience should be, and helps the player expect what types of challenges he or she will face in the game (2005).

While the designer can choose to break the expectation of what a game will contain, this should be done with care. Players select games based upon what they expect they will do in the game given the genre, and misrepresenting the genre to the players can lead to frustrating experiences.

Consistency with the Setting and the World

Where possible, challenges should make sense in the setting, both from a logical perspective as well as a physical perspective. Having something in a room from the modern era in a room that is set in the 1920’s breaks the immersion for the player, especially if it is something the players are focused on in the game such as a modern

electronic directional padlock. A game set in the 1950's that uses the letters on a telephone keypad for an encryption challenge is not being consistent with the timeframe. Black lights should not exist in rooms where they don't make sense.

While there may be automation behind the scenes making things happen in the room, the way that the player interacts with that automation should make sense for the setting. For example, a digital numeric keypad on the door leading out of a jungle setting to indicate the players have won breaks any sense of immersion. A much better conclusion would be a radio that the players have to tune into a specific frequency to get a message that help is on the way.

Keeping consistent within a world includes the method of getting hints; if they players are deep in a medieval dungeon, and have to use a radio to call in a gamemaster, this breaks the ability for players to immerse themselves in the world. If the game designer develops a method of giving hints that allows players moments to interact with the world outside of their physical game space, it can serve to increase the opportunities for players to become more fully immersed in the game if they wish. Escape rooms provide stages for make-believe for players interested in this form of play, but designers can make this easier or more difficult based upon their respect for consistency within the setting.

Consistency within the Narrative

Finally, there needs to be a consistency between the challenges and the narrative. A key component of the narrative is the relationships between the characters, the players, and key elements of the world. While it is important to document these relationships behind the scenes, many elements of these relationships will not be directly presented to the players in the game. The impact of these relationships, however, will be what the players encounter.

In an escape room, the challenges should be inspired by these relationships, and participating in the challenge can help players better understand the world in which the game exists. If the challenges help tell the story and immerse the players in the world, the result can allow a true "escape room" where the players can escape into another world. Sylvester paints the picture of what happens when these immersive elements are not taken into account:

An incoherent world, in contrast, is a jumble of disconnect details. These details may be individually interesting, but they fail to interrelate. Without interrelationships, the world becomes like a pile of pages torn randomly from a hundred comic books: pretty pictures and funny words, but meaningless as a larger structure. Every tidbit becomes nothing more than its own face value. An incoherent world has no depth, no implications, and no elegance. The player can't psychologically step into the world and imagine navigating it and changing it, because the world doesn't make enough sense. (2013, p. 89)

Adding Surprises and Emergent Narratives

Sometimes, a designer wants to present something as a surprise to the players that is not consistent with what they have seen before. This can be very effective, but only if it is used sparingly and if the surprise still fits within the genre and then becomes part of the setting or narrative.

According to Skolnick, there are four stages in adding a surprise. First, it needs to be a surprise; it needs to be something the players did not see coming. Second, it needs to be based upon something that was set up beforehand. Third, it should not be something that is highly unlikely to happen. Finally, it should make sense afterwards to the players (2014). Having a surprise is one way to present the players with a new emergent narrative. For example, one escape room set in a pyramid eludes to alien engagement, and then as a surprise, the players find themselves moving through a transport tube up into an alien spaceship. In this new space, all of the underlying rules of what made sense in a pyramid were changed. This concept of environmental storytelling helped the players to create this mental shift of being in a new space, and the challenges became more technological to help convey the new setting.

Another way to create an emergent narrative is to put the players in the position to make choices. One of the core aspects of play is that the player has control. Players can be given meaningful choices at key points in the narrative, and this allows the story to emerge around the players and helps players feel part of the world instead of just watching a story unfold. This does mean that the designer has to create more content in the escape room than any one individual will see on one play of the game, but this is a concept that has been well-developed in video games for decades.

A simple way to bring about this emergent narrative is to have multiple endings to the game based upon the players' actions. A way to move toward replayable escape rooms is to allow players meaningful choices and different game paths earlier in the game. There could be different spaces that open up based upon the choices a player makes. Again, this means that more of the game will need to be built and developed than any one player can see, but it also means that a player will be able to explore a specific game multiple times.

One escape room built with around multiple narratives is *The Hex Room* at Cross Roads Escape Games. In this horror-genre room, each of six players is in their own room. The player roles are based on typical tropes from horror movies, such as the Jock, the Detective, and the Nerd, and each player has to solve his or her own set of puzzles. The players must then work together to escape the room and survive. The game is designed to be replayed, as each of the rooms is different (Cross Roads Escape Games, n.d).

Developing the Puzzles

While it is not the goal of this paper to focus on puzzle design, there are some basic concepts of good puzzle design that are valuable in exploring the world and narrative through puzzles. A puzzle is made of a number of elements, and at least one of these elements from each puzzle should lead to a meaningful engagement for a player. The context and rules for the puzzle could be delivered by one of the characters in the game. The resources that are used in solving the puzzle could come from the world in which the game is set. The strategies needed to solve the puzzle could map to something in the narrative of the game. The solution can be part of the quest that the players are working toward. And, most importantly, the existence of the puzzle in the game needs to make sense from the perspective of the genre, the setting, and the narrative.

In their book *Puzzlecraft*, Selinker and Snyder explore the concepts that go into creating a good puzzle (2013). The first is to realize that a puzzle is about creating frustration for the solver. A good puzzle allows the player to experience some frustration, but also provides checkpoints along the way so that the player knows that he or she is on the right path. A puzzle that provides no checkpoints until it is completed, especially if it is a long puzzle, can be an overly frustrating experience. One way to do this is to create checkpoints in the puzzle where the player knows that they have hit a state of partial completion, that they are on the right path, and that their frustration and effort will lead to a reward (Selinker & Snyder, 2013). These checkpoints could serve as points of connection into some aspect of the setting or narrative.

Another important aspect of puzzles is that they have a clear solution (Selinker & Snyder, 2013). One problem that many escape room puzzles have is that they lead to ambiguous solutions, and require the player to try each solution in a combination lock in an attempt to find the answer. This method of puzzle design is not rewarding to a player, as there is no moment of true payoff that he or she has actually solved the puzzle. In good challenge design, the team should be confident that their answer is the correct answer before trying it in a lock. The only time a puzzle with an ambiguous solution should be used is if that concept is an explicit part of the narrative, and even then, there should be another way to discover the correct answer from the possible answers that is more narrative-related than “try out all the combinations on the lock.”

Puzzles can be made more difficult through obfuscation. A puzzle with no choices is a task, and while a task can be enjoyable if the underlying activity is enjoyable, the designer should recognize the difference between a tedious task and a puzzle. For example, a maze with no false choices is simply a long path; while these long paths may be used as meditation labyrinths, they are not engaging puzzles. To create an interesting puzzle, the solver should be faced with choices and traps. Some choices may appear to be correct, and many times, the choices that appear easy are not the correct choices (Selinker & Snyder, 2013). However, these traps should not take

up too much of the players' time; otherwise, a player who spent a long time on a trap or a red herring can come away from the escape room truly disheartened. This obfuscation offers another opportunity to tie the puzzle into the world or narrative.

An elegant puzzle needs to balance the requirement for effort and inspiration to solve. "Too much effort, and the puzzle is busywork. Too much inspiration, and the puzzle is a guessing game. Right in the middle, and the puzzle is worth my time" (Selinker & Snyder, 2013, p. 7). Well-designed puzzles should have players moving between putting in effort to reach the next checkpoint, and then require the players to step back, think about the next path to pursue, and create those magical moments when the player figures out what to do. Having these critical a-ha moments is a great reward for a player; without them, a puzzle is nothing more than a tedious task (Selinker & Snyder, 2013).

The problem with a-ha moments is that they create a frustrating situation for someone who can't come up with the a-ha. They are also very difficult to playtest, as they insert an element that can take a few seconds or can stump a team to the point of needing a clue. One solution to this problem is to create puzzles with a-ha shortcuts. If there are multiple paths to solving a puzzle, one of which is all process, but time consuming, and the other allows for some shortcuts, this can better offset the risk of using a-ha elements in puzzles. Examples of these shortcuts can be to build the puzzle around a pattern that can be detected before completion, have the puzzle resolve to a word where some letters could be guessed, or have another item in the room, such as a reference book, that could help the players skip steps in a puzzle.

Red Herrings, Obfuscation and McGuffins

One of the areas of debate in escape game design is the integration of red herrings, which are false clues and puzzle paths created to mislead the players away from the quest. Designers see red herrings as a way to make a room more challenging; however, few players appreciate red herrings. Given that players have only one chance to experience most escape rooms, a player who spends time exploring a red herring misses out on the meaningful actions in the room. The result is that those players end up frustrated and disappointed that their contribution was meaningless.

One difficulty in designing an escape room is that items and concepts introduced into the room to bring about genre and elements of the larger setting can be taken by players as red herrings. The design challenge is to balance the need to ensure that players understand what is important for a quest with the desire to have the players immersed in a world. Providing exposition that is not important in solving a puzzle can create red herrings for players; this is why tying the challenges into the exposition is a valuable strategy.

As mentioned earlier, when designing a puzzle, one of the important strategies is obfuscation, which is creating false leads for a player to explore. In theory,

obfuscation is the same concept as a red herring. The key difference between a red herring and obfuscation is scope. Using obfuscation within the confines of a challenge, where the player knows that completing the challenge will lead to progress in a quest is acceptable and expected. Having challenges that in and of themselves do not lead toward a meaningful action is where players will get frustrated in an escape room game.

A narrative concept related to red herrings is the McGuffin. “In Francois Truffaut’s *Hitchcock*, the director himself explains that he used the term ‘McGuffin’ to refer to an object in a film that is unimportant in itself but that motivates the plot” (Howard, 2008, p. 84). In an escape room, a McGuffin is something in the room that, at first, has no clear connection to the quest, but that something occurs during the game to elevate that game element to quest status. By involving an item in something that the players already know is important to a quest, such as a challenge or information from a non-player character, it can help the players to understand the McGuffin is not a red herring. What is important is that this is a deliberate choice and the transformation from red herring to McGuffin to quest item is clearly presented to players in the game.

Combining Narrative with Technology

Some in the escape room community categorize escape rooms by the technology used. Shawn Fischein proposes four generations of technological advancement as a way to categorize escape rooms. Gen 1 rooms are mostly mechanical in nature and require human engagement and human power, either of the player or the game master, to make things change in the room. Gen 2 rooms use more electronic sensors, magnetic locks, and remote controls to change elements in the room, but they are still human-triggered. Gen 3 rooms integrate technology and computer control, so that the room is able to respond to the actions of the players without human involvement. Gen 4 rooms automate the clue systems, control the flow of players through the experience, and can change the game space based upon the performance of the players (Room Escape Artist, 2016).

The technology used to support a room is akin to the interface design and programming in a digital game. The interface and underlying infrastructure can make the game be easier to engage with or can create barriers that impede play. However, looking at generations of technology is only one way to consider escape room development. Looking at the different ways in which genre, setting, world, narrative, and challenges can be integrated into escape room design leads to a different generational model that focuses on narrative.

Puzzle Rooms: Puzzle rooms have a series of puzzles, but no overarching genre, setting, or narrative. The player does not have a role other than puzzle-solver.

Thematic Rooms: Thematic rooms are set in a specific genre and setting, but the role of a narrative is not a key part of the room. The set and challenges will be themed

around the setting to evoke a player experience of being somewhere, but the roles that the players have is not important to the room. There may be a light narrative, but it is not a significant part of the game design.

Narrative Rooms: Narrative rooms have a specific genre and setting, and also have a narrative that is important to the escape room design. The players have defined roles, and the challenges are tied into the narrative. A quest-based structure helps the players to find meaning in their activities.

Hypernarrative Rooms: Hypernarrative rooms are narrative rooms where the players have choices about the direction the narrative takes. There is more content designed than will be seen in any one play through, as the players choices will affect what content they engage with. These games may change through interaction with live actors or with technology, and may be designed as replayable experience.

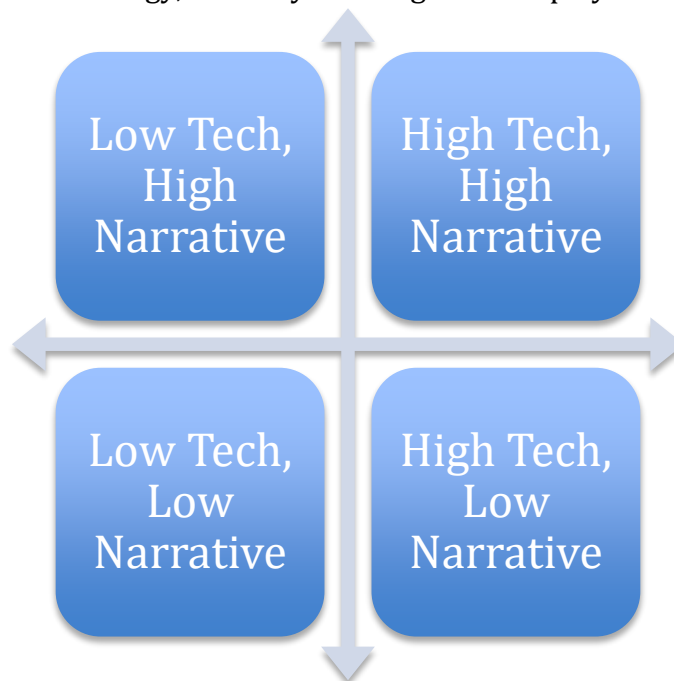


Figure 1: Considering the technology and narrative as two dimensions of escape room design

This model of escape room narratives can be paired with the model of escape room technologies presented earlier to create a two-dimensional model. A low-technology room can still be a hypernarrative experience; interactive theater is a good example of this. A room can fall at any point in this matrix, and each cell will provide a different type of experience. To avoid confusion with generation numbers between the models, I propose the terms “Human-Powered”, “Electrical”, “Automated”, and “A.I.” for the four generations of technology in rooms. Putting the two models together produces the phrases in Table 1.

Human-Powered Puzzle Room	Human-Powered Thematic Room	Human-Powered Narrative Room	Human-Powered Hypernarrative Room
Electrical Puzzle Room	Electrical Thematic Room	Electrical Narrative Room	Electrical Hypernarrative Room
Automated Puzzle Room	Automated Thematic Room	Automated Narrative Room	Automated Hypernarrative Room
A.I. Puzzle Room	A.I. Thematic Room	A.I. Narrative Room	A.I. Hypernarrative Room

Table 2: Using the terms from both generational concepts to describe the tech and narrative of a room.

While earlier generation rooms can be enjoyable experiences, the industry is working toward the future in both technology and narrative design. The technology for generation 4 rooms will be useful in creating the generation 4 hypernarratives, as the room can then adjust to the actions of the players. But rooms can exist at any combination of technology and narrative generations.

This is not the complete picture of escape room design. Puzzle design continues to improve in escape rooms along with the technology and a narrative. In early escape rooms that emerged from puzzle hunts, traditional puzzle forms like Sudoku and riddles were common. As rooms integrated themes, these puzzles took new forms that better fit the theme of the room. As the sets became more complex, non-traditional puzzles involving the manipulation of physical resources emerged. New structures of puzzles that required multiple players to complete created better experiences for teams. The future of puzzles in escape rooms lies with dynamic puzzles that are different every time. Thus, all three models of technology, narrative, and puzzles head toward the same goal of having replayable escape rooms, which will change the industry.

But Round Up to Fun

There is one concept that has not been explored in this paper, and that is the elusive concept of “fun”. The quote “Round Up to Fun” was created by room designer Robert Leveille during a discussion on escape room design, and means that while most of the room design should remain consistent, sometimes something needs to be adjusted away from realism to make it a more enjoyable player experience. A similar concept is captured in the idea of “Disney Magic” that runs through the Disney theme parks. While the environmental storytelling concept is part of what makes the Disney theme parks great, they also leave the space for a Hidden Mickey here and there, where designers embed a Mickey Mouse logo throughout the park. As a game is based on the concept of play, then escape room games should remain a playful activity at heart with this small magical moments.

Escape room designers looking to create games that are more consistent can do so by applying the “Ask Why” rule to every element of their game. Why is the code to the padlock written in invisible ink on the bottom of the box that is locked? Why are there numbers written on the inside of the lamp shade? Why is there a laser maze in an Egyptian pyramid? Why is there a black light in this world? And, most importantly, why should the players care about what they are doing? To help players have a meaningful experience, designers should consider how the challenges help bring about the genre, fit within the setting, and convey the narrative.

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