# Rule Breaking and Non-Euclidean Experiences in *Antichamber*

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*Antichamber* (2013) is a highly unconventional game when compared to other games of its era because the game seems to break all rules of how players interact with space itself. From its visuals to its gameplay, world, and sound design, every part of it falls outside the norm. What makes the game stand out from others is that these elements combine to create a cohesive artistic experience that has close thematic connections to the experience of growing up. Because of the quality of design and the focus on creating a novel experience, I recommend nominating *Antichamber* for inclusion in Cornell's game collection. We will begin by discussing how the game's visual style is created, followed by its use of non-euclidean space to subvert expectations, and finally how the sound ties these elements together and how the thematic consequences arise.

The first thing the player will notice when they start playing the game is the minimalistic visual design. The scenery is mostly composed of flat lines and ninety-degree angles. The space is composed of hallways, rooms, and some open areas, and the edges of walls are described by solid black lines with virtually no texture in between them. The effect of this aesthetic is that it immediately signifies the world of this game is not anything like our world. The lack of any concrete references to real life objects puts the player in a disoriented and confused state, signaling to them from the beginning that this is not a game which follows conventional rules. The black and white setting of the game's world is occasionally punctuated by splotches of color, which serve to break up the visual monotony, as well as to draw the player's attention to areas of interest. Although the color palette consists mostly of bright and simple colors, the careful juxtaposition of different shades in space means the game's visuals still hold a significant amount of aesthetic merit. This indicates that the game is not visually boring despite its minimalist approach. The choice of visuals does have an important link with the game's goals and themes, which will be analyzed further later on.

In stark contrast to the simple visuals, the physical space in which the game is set is not simple at all. It would not be unreasonable to consider *Antichamber* as the defining representative of a genre of games which bear the name "non-euclidean". The meaning of this

term originates not from game design but from math, referring to any space that does not obey the rules of flat geometry as postulated by Euclid in ancient Greece. Features that characterize non-euclidean spaces include straight paths that loop back into themselves, triangles with angles that don't add up to 180 degrees, and distances that don't add up physically. Before *Antichamber*, the only major game that attempted to explore these ideas was the puzzle game Portal (Backe). This game allowed the player to place portals that connect two distinct regions of space to each other, breaking the traditional rules of space and making for a fun experience. *Antichamber* takes this a step further, completely shattering the rules. Every inch of *Antichamber*'s space is filled with physics-defying objects, topological incongruities, and mind bending puzzles. The first room encountered by the player features a large, deep gap with the word "JUMP" hanging from the ceiling and an interesting area on the other side. If the player chooses to obey this instruction, they will fall into the gap and arrive at a new section of the game to explore. When the player returns to the original area, the word "JUMP" will instead be replaced by "WALK". Walking without jumping reveals that there was actually a floor preventing the player from falling, with the catch being that the floor would disappear if the player ever jumped up. Although this feature isn't strictly non-euclidean, it carries the same subversion of expectation intrinsic to the rest of the elements of the game.

A more representative example of the spatial rule-breaking can be found in an area that players encounter early on in gameplay. After walking through a dark hallway, the player emerges into a room with two staircases on the opposing side. The staircase on the left is shaded bright red and descends into the ground, however the one on the right is vivid blue and ascends into the ceiling. The player is forced to choose between these two paths without any other information to help them decide. If the player chooses to walk down the red stairs on the left, they are led into a small corridor that has two corners, which after turning around, then leads to another room. This new room looks identical to the room with two stairs, when in reality it is the same room, thus revealing the twist. This is a truth that even the most stubborn of players must succumb to because the stairs loop back on themselves no matter how many times they are traversed. The blue staircase is no different; it does not matter which choice of color or direction the player makes, they wind up right where they started. Some players might get frustrated when they reach this point. A subset of these players will have the insight that there is yet another

option, to go in the direction they came from. However, this path does not lead the player back to the previous area as is the nature of the game. Rather, it sends the player into a small room with a sign, which upon entering, traps the player within it. The sign contains a drawing of a finger pressing the "Escape" key. If the player performs this action, they are taken back to the map room, which is essentially, a physical realization of the game's menu.

The commonality of these two sections is the inherent contradiction of the player's preconceived notions of how reality works. The fundamental idea dispelled by the gapped room is that of object permanence, an idea similarly discussed by Backe (2021) In our physical world, things exist and keep on existing until they are destroyed by external forces. However, in this game, the existence of objects now depends on how the player is moving or even in which direction they look. One example is the bridge across the gap does not exist unless the player chooses to walk over the gap, which there is nothing akin to this in our physical world. The staircase room showcases one of the multitude of moments in which a path that physically must lead to another location instead ends up at the starting point. As the game states, some choices simply do not matter. Physics tells us that some choices really do not matter but the reason we make choices is because we believe they do. Through these design choices, *Antichamber* communicates to the player that life is not just a linear series of choices and consequences, but that there are circles and dead ends that people can get stuck in. In this sense, *Antichamber* is not just a puzzle game. Granted, there are puzzles within the game that are solved by manipulating small placeable cubes, but the game is about something more general because the game places the player in a position where all the knowledge they acquired throughout their life does not apply. By starting the game, the player is born into a completely new world that they must learn the rules of. The experience of learning, failing, going in circles and eventually mastering the game directly mirrors the experience of children trying, failing and then trying again to learn the rules of our world.

The sound design complements the visuals in service of *Antichamber*'s ethos of learning. The purpose of the barren visual landscape is to allow the player to devote the most amount of their attention to interacting with the space of the game since the focus is primarily on the space. At first glance, the sound design seems to be the antithesis to the visuals and space in its intent.

Unlike the abstractness and disconnect that the other parts of the game embody, the soundscape is derived from nature and carries a sense of familiarity. During play, the sounds of birds, frogs, wind, and thunder can all be heard at one time or another overlaid on top of an ambient background music layer. Different combinations of these natural sounds juxtapose each other as the player moves from area to area. The background music itself is composed of long drawn out tones with flute-like melodies and occasional percussive accompaniment. The effect of the music's slow harmonies and instrumentation is that it creates a primordial, almost meditative atmosphere. This combined with the nature-derived component means that the music feels much more grounded and attached than the rest of the game, which feels necessary for the game's success. Without the feeling of comfort and familiarity that the soundtrack provides, the player would find no component in the game's composition to attach themselves to. The game would then feel isolated and detached from anything the player may be familiar with. Thus, *Antichamber*'s grounded sound design serves to balance the visual abstraction and spatial confusion necessitated by the goals of the game.

At various important points of the game, the player encounters a mysterious black cube-shaped entity. Each time the player upgrades their cube gun, which is the main puzzle solving tool used throughout the game, they see the entity right before they attain the gun upgrade. However, the entity is always out of reach. As the game draws towards its conclusion, the player enters a chase sequence where they run after the entity and solve puzzles along the way. Eventually, the player traps the entity in a glass box and uses their gun to absorb the entity, this process turning the gun black. The angular world of the game disappears, leaving behind a giant open space consisting of smoothly curved structures that stand in stark contrast to the enclosed rectangular hallways and rooms characteristic of everything that came before. The player then places the entity into its receptacle, and the world is absorbed into it. It is then that the game ends with the logo. If *Antichamber* is a game about going through the stages of life, then the black entity clearly represents death. As a player, getting upgrades and mastering the rules of the game is like growing up, but once this is complete, after conquering everything else with the skills learned through life, there is no longer any choice but to let death take hold. As in the game, a person might have many brushes with death in their own life. It is still impossible to

know what death is like until it is there. If death was the goal all along, then achieving those goals is like the end of everything else.

Antichamber is a significant game because of how its visual, sound, and level design come together to form a beautiful construction that tempts players to engage with its own kind of reality. The experience of playing the game is that of interacting with an internally coherent world that has its own logic that is totally alien to the player at first. The process of experiencing the game from start to finish parallels the experiences of going through the various stages of life; from grasping the rules of the world to mastering them and using them to explore and achieve desired goals. As the ending suggests, the fun of life comes more from the journey than the destination. The experience of learning and discovery and being stuck in dead ends is what makes life interesting and worthwhile. This is the truth that Antichamber reveals with its design. The concepts that were thoroughly explored in Antichamber have continued to appear in games that followed. New realizations of non-euclidean space have been showcased in games such as Hyperbolica (2022) and Manifold Garden (2019), the latter also drawing considerable inspiration from Antichamber's visual aesthetic. Besides serving as the influence for later games, Antichamber is important on its own because it is the perfect model of how a game should be structured. Its success at throwing the player into an unfamiliar world and having the player discover the rules on their own while having fun along the way is unmatched. The experience of playing Antichamber for the first time is what all games should strive toward.

Bibliography

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