Afterland – From well theorized to well learned?

Konstantin Mitgutsch, Matthew Weise
Singapore-MIT GAMBIT Game Lab
Massachusetts Institute of Technology
77 Massachusetts Ave, Building NE25-315
Cambridge, MA 02139
k_mitgut@mit.edu, sajon@mit.edu

Abstract: Afterland is a recursive learning game, based on a theoretical framework, and designed at the Singapore-MIT GAMBIT Game Lab as a research tool. The game uses subversive game design elements to challenge players' expectations and force them to rethink their conceptual framework. The following paper gives insights into the theoretical background and outlines the application of pedagogical theories to the game design process. Video games that shaped our understanding of subversive game design for recursive learning are discussed and discoveries made through developing the game are shared. It will be shown how a learning theory can be translated into game design patterns. In addition, to that the disparity between a well played, well designed and well learned game will be examined and exemplified. Hereby, we will highlight how diverse the players' experiences of playing and learning in and through Afterland have been and where educational design reaches its limit.

Introduction

Writing a “well played” article about a video game that you have been involved in developing is somehow a mission impossible. Why? If we understand “well played” as a form of “well read”, then we have become too blinkered in our own work to value the experience of playing it. And even if we understand “well played” as “well done” – a form of reflection of the development process – it appears inappropriate to describe how “well” our game was designed. Therefore, this well-played mission impossible has to start with defining standards that we can use to evaluate the quality of our design.

Afterland is an atypical video game, because it is both research-based and grounded on a learning theoretical framework called “recursive learning”. The development of the game involved four fundamental steps: (a) developing the theoretical framework, (b) applying the theory to game design, (c) developing a prototype and the final game with a team of students and (d) evaluating how well the game meets the theoretical standards. To elaborate on the theory behind the game would be repetitive (Mitgutsch & Weise, 2011), and simply describing the experiences of design would be too limiting to explain what *Afterland* is all about. Hence the following paper will focus on specific aspects, that – in our understanding – appear important to well played articles that focus on educational games. The claim made by many games studies scholars, that their learning experience in a game can be seen as “the” learning experience of playing the game in general is problematic. This might make sense for the “well played format” but if we are examining the learning outcomes or the educational impact, we need to reconsider the “well learned” experience of the players. The pivotal question this paper investigates is: How well does the designed game fulfill its theoretical basis and how well does it match the learners’ experience? To answer these questions we will introduce a brief summary of the theoretical background, explain how we applied the theory to the game design and finally,

provide a unique example of a 9-year-old “well playing” the game, *Afterland*.

Well Theorized

The idea behind the theoretical concept of *Aftlerland* was inspired by a quote by the German Philosopher Hans-Georg Gadamer. In his book *Truth and Method* (1998) Gadamer argues that the "negativity of experience" has a certain "productive meaning" to the process of gaining experience (1998, p. 353). This statement appears mystifying at first glance, but it leads to one of the most essential insights into the process of experiencing and learning. Those experiences that affirm our existing experiences are not “productive” to our learning process – as they merely confirm what we already know – but the refutation of our expectations is the dynamic force that shapes our experiencing and learning. Failure, disappointment and disillusionment might feel displeasing, but from a learning theoretical point of perspective it forces us to develop a new understanding of others, the world, and ourselves. In short, recursive learning is an experience-based process of restructuring prior expectations by incorporating confrontational incidents into the body of experience (cf. Buck, 1998; Meyer-Drawe, 2009; Mitgutsch, 2011). The French phenomenologist Maurice Merleau-Ponty (2002, pp. 466) exemplifies this process by analyzing a boy’s expectation that telling stories is related to the magical force of his grandmother’s spectacles: One day in his grandmother’s absence the small boy picks up her spectacles and wants to discover the stories on his own. When he realizes that all he can see is black and white his high expectations are disappointed. Things work different than he anticipated and he response to this insight with tears.

It appears easy to reduce the boy’s expectation as childish and irrational, but more frequently than desired we all go through similar experiences. It is true that for the boy’s grandmother her glasses were necessary to read the story, but the instrument did not enable him to access the narrative. Sometimes we all figuratively have experiences through these “spectacles” and are

disappointed at how our expectations and judgments are proved incorrect. In some cases we realize that our knowledge or information turned out to be wrong, in other instances our biases and prejudgments are unmasked or our illusions are demystified. In theory, failing helps us to restructure our expectations, to develop new and more appropriate expectations about the learning object and about our way of learning (Mezirow, 2003; Choi & Hannafin, 1995). This form of so-called recursive learning differs from educational and "institutionalized" approaches to learning that focus more on *informational* acquisition of ideas and knowledge. Hereby the learners are forced to "return" to their expectations and rethink or restructure them. Recursive learning, however, has a profound impact on the way humans learn in general, as it allows learners to revise old, and develop new, perspectives and change their modes of thinking (Bereiter, & Scardamalia, 1993). Thus, in comparison to a more "childish" – undogmatic – interpretation of our experiences, we tend to ignore the refutation and adhere to our erroneous beliefs, expectations and judgments. Returning to the example of the boy being disillusioned by the magical powers of his grandmother's glasses, we often blame others or the tools and instruments for not fulfilling our anticipations. In many cases, the reasons for disappointments and disillusions are therefore ignored and the recursive learning process is hindered. But why do learners avoid failing and disappointment if it is highly productive for our learning? The reasons for this phenomenon are complex, but one central reason for this avoidance of confrontational experiences can be found in the fear of social, emotional and sometimes dramatic consequences. If people have invested energy into the wrong beliefs, this fact can cause a dissonance they cannot face. But what if the context of the recursive learning is changed to a playful setting?

Games offer us an environment where failing can be engaging and challenging. In a playful environment we are more open to exploring our expectations and beliefs. We try on different identities, challenge our expectations and restructure our prior experiences without holding onto insufficient patterns (Gee,

2003; Mitgutsch, 2009). If our competencies and expectations are consistently met we might get bored. We are constantly searching for motivating surprises and confrontation. What if we could design a video game that fosters the players to learn recursively? Would this be feasible and how do learners experience this form of learning in games? With these questions in mind, we tried to translate the theoretical assumptions to the design and development of a digital game.

Well Designed

One of the greatest (though widely debated) pleasures in game design is playing tricks on players, lulling them into the sense that they know the game and then undermining that security to produce a shock or revelation. A number of games employ this tactic. Although, many use them as little more than 'parlor tricks', simultaneously fun and infuriating jokes or riddles that players usually remember long after the game is over. Those of us who grew up on the NES might remember once such instance in the game *Monster Party* (Bandai, 1989). *Monster Party* was a platformer remarkable mostly for its cheerfully morbid imagery, like dancing zombies. These zombies were presented to the player as a boss, preceded by text on-screen that said, "Watch our dance". Players who attacked the zombies could literally spend hours in frustration, since they always got up and continued dancing. The trick, of course, was to do what they told you to do. If you just didn't attack them for a certain amount of time – in other words, *watched their dance* – they eventually thanked you and died, allowing you to proceed. Though this may seem like a clever riddle, it was not unthinkable that some players would simply fail to realize the correct behavior or necessary action, simply because not committing acts of violence fell so far outside of the normal behavior of the game that it may not have occurred to them.

In the days before Internet FAQs, the only way for a player to finish *Monster Party* was to make that mental leap, to escape their current frame of reference and develop a new one. In that game it was intended simply for fun, as part of the developers'

sense of humor. But it's arguably the same principle at work in games like *September 12th* (2003, Water Cooler Games), the anti-war game that critiqued the War on Terror by suggesting your goal was to "kill terrorists" but made it impossible because collateral damage always creates more targets. *September 12th's* status as political rhetoric is built on the very idea that the player is familiar with certain patterns, and will resist the idea that a game's perceived foundation of game rules is, in fact, "wrong". The only way to minimize terrorism in *September 12th* is to not kill anyone. Like the computer didactically observes in the movie, *War Games*, the only winning move is not to play.

These examples and many others over the course of the last few decades of video games show that recursive learning is already a part of video game design. That is why when the question arose of how best to design a game explicitly to study recursive learning, there was already a strong tradition of games to draw from. We therefore got to work, seeking out these games and classifying them as much as possible. There were several examples beyond *Monster Party* and *September 12th* that were easy to find. *Metal Gear Solid* is famous for its fourth wall tricks and sadistic tomfoolery, the most pertinent to our goals being the sequence in MGS3 (2004, Konami) when all the dead soldiers the player has killed rise from the dead to take their revenge, with the intention of making the player realize that killing is actually counter-productive to achieving their goals. *Shadow of the Colossus* (2005, Sony Computer Entertainment) was another example, most notably the part where the roles are reversed when the colossus-slaying player becomes a colossus. Possibly the one we liked the most was *Fathom* (Adam Atomic, 2009) an online flash game where you are apparently playing a simple platformer, jumping over bottomless pits and eventually fighting a big nasty drill machine. In fact, the "real" game only began when you failed to destroy the drill machine – which is presented as if it were beatable (complete with a health bar) – and fell down into one of the pits and into a serene watery cave filled with colorful fish. If you kept playing, it became clear that the game is really

about swimming and befriending the fish, and having that epiphany is really what underpins the experience.

Based on these examples we developed a framework, which we felt was a good way to break down exactly what these games were doing with player expectations and conventions. In each of the games mentioned above, and including others like *Passage* (2007, Jason Rohrer), *Second Sight* (2004, Codemasters) and *Ulitsa Dimitrova* (2009, Lea Schönfelder/Gerard Delmàs), we identified the *common pattern*, the *uncommon pattern*, and the *overall lesson* each game seemed to teach about manipulating convention and expectation that could then be taken and used in a different game. Once we had each game broken down in this way, we thought the same structure might be useful for designing a game from the ground up, which is how we went about making the game that eventually became *Afterland*.

The Singapore-MIT GAMBIT Game Lab has an unusual training program. We take 60 students during the summer – approximately 40 from Singapore and 20 from local Boston area colleges such as RISD, Berklee, and MIT – and have them split into teams of 10. Each team is required to develop a game in 8 weeks, from the initial concept and brainstorming all the way to final product. This meant there were teams of students – from a variety of cultural backgrounds – whose job it was to make a game about recursive learning in 8 weeks *and* to make it fun *and* make it look *and* sound good *and* be bug free. This of course wasn't easy, but the process was supported by the framework, which we used with each team to begin the process of brainstorming game ideas. After a week of paper prototyping different ideas based on different sets of common patterns and uncommon patterns, the team settled on an idea that was initially a playful jab at anti-social, consumer-oriented ‘nerdiness’.

Originally called "The House Game" by the team, the prototype involved a room that the player, an awkward person in a baggy coat, was furnishing with cool consumer products, like televisions, computers, video game consoles and other devices.

When this person left their house, venturing out into the city, they would run into other people, who, upon looking at the player, would send them into a panic attack at being scrutinized. It was a spin on the idea of stealth, except the need to be unseen was entirely due to the protagonist's fear of normal social interaction. The team liked this idea, and it also fit our theoretical framework well. The *common patterns* were collecting things and avoiding people, and the *uncommon patterns* – though they hadn't been fully fleshed out yet – would involve some sort of inversion of these things.

This idea found straightforward application over the course of development, while being modified by all the normal evolutions that happen during a game project. The team eventually came up with a more refined art style that they felt was less "on the nose" in terms of telegraphing the design intent to the player. Instead of a city set in the modern day, things turned into a surreal jungle, with all characters (including the protagonist) being black silhouettes distinguished only by masks. This was done partly to reduce our art resources, but we also wanted the player to have to work harder to decode our intended meaning, that you were socially isolated. We also wanted a stronger fictional reason for collecting objects lying around. The new fiction gently suggests a post-apocalyptic scenario, with modern consumer products lying in various states of brokenness around lush, beautiful greenery. The townspeople became people who lived in the woods, who simply ignore these remnants of past civilization, thinking they are junk. The player, in a sense, is the last consumer, hoarding electronic remnants, oblivious to the fact that none of it works.

These art choices even had an impact on the on-screen UI. We had several discussions about how "honest" the game should be with the player, in terms of communicating design intent through on-screen feedback. Do we want the game saying "Good job!" and having some sort of a score go up for things the player should not be doing? Most of the games we looked at didn't do that. They didn't actively deceive the player, but relied on the players' ability to deceive themselves. They preyed on

preconceived notions players might have, and then played to those notions through deliberate ambiguity, rather than lie to them in any sort of a direct fashion. It was with this in mind that the game evolved so that our on-screen UI represented the "mental state" of the protagonist – how he/she sees the world – and the game world itself represented the "reality" of people just wanting to be nice to you. We added a bar at the top of the screen that rapidly emptied when the player is looked at by others, but we didn't label it as "health" or "life". It's just a meter, but it looks so much like other game life meters that we expected players to assume it was. We also added a "#/total" item counter, showing the player how many items they had collected and how many were left in the world. To hint that these elements, and their corresponding gameplay goals, were a product of the protagonist's mania, we gave them the visual design of magazine rippings, which even appeared to be "taped" to the game screen with cello tape, as if they were scrap book elements. This was a reference to our opening cinematics in which the protagonist finds a magazine in the jungle with advertisements of all the items he wants to find.

During mid-development focus testing sessions, we found that these elements did much to shape the behavior of players. Many players refused to let their mystery meter fall too far, and the item counter seemed to have the almost Pavlovian effect of making even some casual players obsessed with finding absolutely everything. However, when these patterns were contradicted we made sure to have feedback that tried to communicate their status as "outside" the reality of the game world. When the player "dies" from being looked at (really they are just overwhelmed by anxiety and faints) or the player chooses to "throw away" the items they have collected in their house by accessing the waste paper basket, the UI elements that correspond with these game mechanics are "ripped up" and fall off the screen, leaving the player in a world with no item counter and no meter. In a sense, the perceived game – collecting things and avoiding people – is a mad lens the protagonist is seeing the world through (like the boy trying to make sense out of the signs in the book with his

grandmother's glasses), something which obscures a reality underneath. The real game, similar to *Fathom*, is to "realize" what the real game is, what its rules and goals are, by refusing the perceived game. The players reward for this is to see the perceived game "destroyed" in a sense, to watch it rip itself apart and leave the player unharmed by its obsessive-compulsive agenda.

Well-Played

From a theoretical point of view, we translated the recursive learning concept into a form of subversive game design combining common and uncommon patterns in games, forcing the players to restructure their expectations when playing *Afterland*. Considering the restrictions we had (8 weeks, educational setting, abstract concept) we – as the researcher and the game director of the game – were pleased with the outcome. In the next stage, we conducted a case study using different forms of evaluation to analyze the experiences players have while playing the game. From the results we found one specific aspect we would like to highlight, which relates to the difference between well theorized, well designed, well played and well learned. As the game was designed based on the theoretical framework, but not a specific topic or target group in mind, we tested with almost 100 players from ages 10 through 55 years old and explored how they interpreted the recursive learning process. In some cases, players experienced the game in the way we intended when we designed it: They got into the first common pattern, were surprised by the twist and finished the “real” game and were laughing or cogitating about how biased they were. But, empirically speaking these well-played play experiences were more exceptions than rules – we were quite surprised at how different the experiences of the players were, how some of them fell entirely outside our expectations or intentions but still resulted in learning experiences for players. We would like to discuss the experience of one particular player – Bella a 9-year-old girl from Boston – who we observed playing and later interviewed. One of the problems with educational/serious games is the assumption

that player experience can be control, or that all players draw the same response from a game. We don't believe this is true, and Bella, who had had experience with platformers and had never played or heard about *Afterland* before, was a good example of why. She made us learn recursively about our research and design approach:

Bella started the game after watching the intro (that she admits she can't recall when she is later interviewed) by leaving the house and collecting the first three items without any problems. On the way to item number 4 she was confronted by one of the "enemies" and tried to yield to it, but failed. Her "life bar" vanished and she cried out "I didn't know they could kill you!" When she realized that she did not actually die and the "enemy" befriended her character, she asked "So, is he now my friend?" and responded to this fact with "sweet!" After that incident she continued collecting items and friends and transported all the items to her house. For one of the harder jumps she invested over 3 minutes, without giving up. After bringing more objects to the house, she realized that her friends followed her but would not enter her home. She noted, "I think they want me to trash every thing… I got a lot of old stuff here!" She then entered the messy house and used the option "clean up my house". After erasing one item, she stopped cleaning and went back to the "friends" outside the house asking, "So what do you want? I still need to clean up?" When asked why they want her to clean she commented that they are "evil" and might just try to become her friends so they can steal her stuff and bring it to their dark "underlord". In consequence she went back to the forest and to collected items. Finally, she "finished" the game by going to bed in the cramped house, with all her friends waiting in front of it. After Bella finished the game, she was asked what happened in the game and she explains her interpretation of the play experience. She recalled leaving the empty house, jumping around the world and collecting friends when she met the first "freaky guy" who first "killed me but then got my friend". When asked why she was afraid she surprised us with her answer: "Because they have masks that I have never seen before and I

have seen very particular masks and the only scary masks I have seen is in movies. And I have never seen so colorful masks, because when I saw this movie "Spirited Away" everybody had these odd masks.” She went on to explain in detail how the masks in the movie scared her and how they differ from the masks in *Afterland*. She recalled the situation of the confrontation with the “freaky guys” this way: “When you come near them, they put the beam on you and than you fall asleep or die. But then you wake up again and they realize what they have done and they have a question mark. And then they want to become your friend and they want you to trash their house and follow you.” When being asked what *Afterland* reminds her off, she elucidated a recent dream she had:

> “I was in a really white hotel. Everything was so bright and white. I was walking over a bridge. Then there was a huge pool under the bridge and there were orca whales under the bridge and they were jumping over the bridge and they almost got me. And when I went back to my room in the hotel there was this red cube and it was big and then it ... got eyes and eyebrows and an angry face. And then there was his partner looking like an oval, and then they tried to kill me. Then I died and I woke up.”

When being asked what in *Afterland* reminded her of that dream she stated, ”the bridges do!” After the interview she asked about the idea behind the game and we explained to her what the game was about. She immediately played it again, collected all the items and friends, cleaned up the house and had the “good ending”. But she still believes that the “friends” are evil because “why would they otherwise still wear masks”. She furthermore commented, that she does not agree with the idea that you have to clean up the house just to get friends. She explains that she has a passion for chemistry and her friends don’t really understand that. Thus, she will not give up chemistry just because of her friends.

Well-Learned?

The experience Bella described while playing *Afterland* differs from our theoretical concept and the idea behind the game. She read the game, its narrative and even the landscape through her own lenses and in relation to her prior media experiences, biographical events and through experiences she made in other video games. Even her dreams and certain movie characters were related to the game and shaped her experiences. She understood the two patterns, and even the twist, but contextualized it differently. One could easily downplay Bella's well played as "just" a kid's perspective on the game, but what Bella is speaking out loud is a pattern we found in many of the other interviews. Nobody played or construed Afterland the same way and they were highly related to the playing literacies and subjective interpretations of the players. While some players thought this game was about hoarding syndrome, about racism, about nostalgia or about World War II, others just collected all the items and ignored all the subversive elements. This showed us that the theoretical approach was well designed in the game play, but that it is ultimately up to the players to contextualize the game in their own subjective way. Furthermore, we found that many players still feel a lot of pressure to perform well in a game and that the freedom to fail was not as liberating as theories claim. It's not that risk and fear do not exist in games, but they exist in proportion to the playful context. Just because a player is not afraid of "dying" in any real sense doesn't mean they are not afraid of losing points, losing time, being humiliated, etc. (Really, this should be obvious to anyone even basically familiar with sports.) The "freedom" of playful learning is highly context dependent and relative, and it is indeed the ability for risk to be seen as "real" within the context of a game that even makes studying recursive learning possible with a video game.

Recursive learning is taking place in video games all the time and *Afterland* is intentionally designed as a recursive learning game subverting common design patterns. We think the game meets our theoretical standards, but the case study showed that a gap

exists between the theory, the game design and the players' experiences. This aspect turned out to be true for *Afterland*, but it helped us to understand that this might be the Achilles' heel of educational game design in general: You can offer a learning opportunity, but you cannot instrumentalize a learning obligation. Nevertheless, the playful setting opens the opportunity to explore recursive learning processes and (in some cases) develop different perspectives on games, learning and life.

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