

Persuasive and Serious Games

Reflection Report

Virgil Tanase

23rd May 2012

IT University of Copenhagen

1. Introduction

This following paper is a reflection on the design and the development process of the game "Green Time", made by the Team AVANTgarde as part of the course Serious and Persuasive Games, held at the IT University of Copenhagen during the Spring semester of 2012. Aside from creating this game for the above mentioned course, the team participated with it in the Microsoft Imagine Cup 2012, Windows and XBox games section, where it has made it through into the last round before the finals, answer regarding participation in the finals pending at the time of writing this paper.

To start, a definition of what serious games are is best, thus from all the definitions presented during the lecture, the following seemed most appropriate: "Serious games have a purpose beyond entertainment, including (but not limited to) learning, health, advertising, and social change" (Brian Winn, 2007). The following reflection is on a game that contains aspects of both learning and social change, from its conception to its final release.

2. Objectives

The main design objective of the game is to provide the players with examples on how to improve themselves and the environment around them. The persuasive objective of the game is to have the convince players to take an active role in the environment surrounding them. From a game objective perspective, fun and improving the environment.

That did not start that way however, at the start of the project, the theme was a different one: autism. The game and persuasive objective was to help autism children through an interactive game, though due to the lack of native danes in the group, as well as the difficulty of collaborating with the centres for autism in a country where all of the team members are foreigners. Thus, due to language and cultural barriers, the theme had to be scrapped and based on other videos seen at the Imagine Cup website, the decision to change to an environmental theme, was taken.

In terms of activism, the game supports it, both passively and actively: actively through the dialog as the lines are straight-forward, where the player's lines look like somebody lecturing and scolding the non-playable characters as well as the players actions, as he is constrained to "do good" by fixing environmental problems through action and conversation, as well as passively through the imagery, puzzle examples and positive reactions and effects from puzzle solution.

3. Design

3.1 Conception

The main direction on the design was to achieve a fun game and to design it so that with fun in mind, thus a playcentric approach was taken, fitting more to Tracy Fullerton's perspectives as she presented them in her Design than to the frameworks presented during the course. "This iterative method, which we call the <<playcentric>> approach, relies on inviting feedback from players early on and is the key to designing games that delight and engage the audience" (Fullerton, 2008, p.2).

In this sense, due to the desire to achieve something that can be seen as playful, we needed a playcentric approach in order to observe and take note if we have achieved the right reaction in players, and that is best done through feedback and player observation. The rules from the Imagine Cup competition also aimed for having the team adopt a playcentric approach to the design of the game, by having the concept sent early, in mid February, a alpha/beta version of the game in mid March and a release candidate version at the beginning of May. Besides these, the lecture exercises have also helped in the iterative design process, especially the one on multiplayer.

Early in the concept phase, the objective was to create a game for children with autism. Several meetings to talk about how to design such a game were made, mainly using the article wrote by Philippa Roxby for the BBC, "Are apps the key to revolutionising autism learning?", but

no clear view broke through as a lot of analysis on the way autistic children are treated here was needed, besides a bridge above the language barrier between the autistic danes and us.

Going back to the drawing board and noticing several trailers of previous titles that took part in the Imagine Cup in recent years, from garbage sparked another theme: the environment. It eliminated the language barrier as this time the target would not be autistic children, but casual players everywhere. Another element that sparked interest was the thought of using time travel, and according to Thomas Malone, in his article "What Makes Things Fun to Learn? Heuristics for Designing Instructional Computer Games", Time-travel is a skill element that deepens the fantasy already present in a game world, by which it evokes or shows images of objects or social situations not actually present. Besides that, another mechanic that was decided to be put in the game, was showing a player's progression by colouring the environment. This addition would stimulate the player's curiosity through their senses, creating a form of sensory curiosity, something that Thomas Malone also pointed out by noting that "Curiosity is the motivation to learn" (p. 165).

3.2 Ethics

From an ethical perspective, having the game be more activist than passive, one could say that it is unethical, even though it has the player solve puzzles only by thinking from an ethical perspective. This method of forcing a player's decision is what constitutes as an unethical act as it limits the freedom of choice, having the player go through consequential ethics without giving the possibility of a wrong choice leading to a noticeable bad outcome to the game world can be seen as unethical as it is similar to forcing someone to watch a movie. This linearity although easy to design is unethical for a learning game because failure is usually viewed as the key to success.

Besides what was mentioned above, constraining the player to be a "good guy" may be the opposite of what Miguel Sicart says in his article, "The banality of simulated evil", (2009), but it has the same main theme. Who could say if one is doing good or doing evil if one is simply following rules and orders, or worse if there is no way of choosing differently. That could also be applied to the game by removing the player's freedom of choice, and forcing him/her to be a "good guy", an activist without being able to choose to be an activist. Apparently, the only choice the player has from the start is whether to play the game or not, whether to be an activist or not.

Beside the apparent game-related ethics from the real world context, there is an ingame ethics system in the way the player and the non-playable characters are presented: round head and square head. The concept of round and square heads come from language and symbolism, where a circle, the round shape, is the symbol of perfection, while the square when coupled with the word head, in a couple of languages, including Romanian, indicates a narrow-minded person, "Cap-Pătrat". this symbolism is used to show the state of mind of the player or of the character where a round-headed character indicates an open mind, while a square-headed character shows the opposite. The player also changes colour within the game, being the only character in-game to do so, where if the player is green, then he/she is able to time-travel. If he/she does not solve a puzzle inside the house, then the players colour changes to grey and the time-travel ability is lost and a further miss on the indoor puzzle makes the player a square-head and unable to convince other people to improve themselves.

3.3 Theme inspiration

The game drew a couple of inspirations for its theme, from movies to video games. The game that stood as the basis from which a lot of elements were borrowed, including the linear playstyle is “Every day the same dream” by Mollenindustria. The game features repetitive gameplay where the player appears to repeat the game after solving a puzzle and having only a lady in the elevator saying how many days are left in a sense of hinting at the number of puzzles left until completion. For the time-travel element, another game stood as inspiration: Braid, developed by the Microsoft Game Studios, in 2011. Braid’s main game mechanic is the time travelling mechanic, which actually makes it fun, thus the decision to try and experiment with it and blend it with the previous game was taken.

Besides these two games, the third and final inspiration was from a film: Groundhog Day (1993), featuring Bill Murray and Andie MacDowell. In this film, Phil, the character interpreted by Bill Murray is an unhappy individual who has to do a coverage on an annual American holiday in Pennsylvania, Groundhog Day, a day which is similar to other traditions in different countries to see if spring is coming or if there will be another month or so of winter. Phil is forced to relive the same day over and over again and after a period of denial, followed by different attempts of suicide, he starts to change into a better person, and in this way win over his love interest in one day, the loop ending once he has won over his love interest and changed the town.

Having these influences, the game, Green Time, follows a mix between “Groundhog Day” and “Every day the same dream” by adopting a story similar to both games, or a mix between both, by using the linearity of the above mentioned game and the repetitiveness of the above mentioned film. These together with the player’s possibility to go back in time create a wonderful fantasy environment that is visually stimulating, and according to T. Malone, encourage learning through sensory curiosity the ability to colour the environment with each puzzle solved entices players to try and find all the puzzles, no matter how hidden they are, and think think of an appropriate solution to these, a solution that they might have not thought of in a real-life situation. Thus, through finding solutions and different puzzles, players learn. It is, as Malone puts it: “Curiosity is the motivation to learn” in regards to the game.

To sum up, from all the material used for inspiration, a game was created that had a main character with the ability to travel back in time and whose task was to solve the problems/puzzles of the world around him and in this way colour the world. Initially, similar to the movie, the game would be frozen on the same day, but the idea was confusing during playtesting and thus had to be dropped. The player first has to solve a puzzle in the household. Failure to solve it, results in punishment by switching the state from a green, to grey, and if failed a second time, to a square head. Going back to solve puzzles indoor improves the state of the player. In order to solve puzzles, the player must either convince other NPCs to change their habits, or interact with the environment. Going back in time adds a new dimension to the playing field as it creates the possibility of having problems that can only be solved at the source.

4. Development

Regarding the development process, my personal contribution, besides design and concept, where the team as a whole pumped in ideas and voted out what was best and then

polished that, was in animation, music and sound production. By adopting an iterative design approach, development was shorter in time and scope when compared to designing, thus ensuring that the game had solid ground. Besides that, the decision to use XNA with XML, made it so that the game is modular, meaning that new content could be added easily.

In regards to content, besides thinking of ourselves on what content to use puzzle-wise, asking for help from a friend currently volunteering for an eco-club proved to be an advantage. This person, working for Eco-club Timisoara, provided a list of problems in the household and immediate surroundings and what they could do that proved useful content-wise. Besides that, during a multiplayer exercise during the Serious and Persuasive Games course, by making up a multiplayer version that has its roots in improvisational acting, content was provided unwillingly by the playtesters, similar to cultural probes (Gaver, Boucher, Pennington, Walker). This multiplayer version consisted of one of the players acting as the activist, or main player, and another as the environment offender, or the non-playable characters that the player has to convince in-game. Besides being very entertaining, through improvised acting, the multiplayer sessions provided with content as the players were imagining their own situations and coming up with puzzles that wasn't thought of before.

All animations were made by either converting scanned drawn animation and then vectorising it so that re-scaling is easy or by actively modifying an element so that it appears to be moving, just by changing its position and then taking a different picture. These were then inserted into a main sprite image that contained all the images, so that it would be less of a memory workload. All animations were vectorised using Adobe Illustrator and put into a separate image using Adobe Photoshop.

In regards to sounds, the idea was to not have a sound-heavy game, as it could lead to a sensory overflow by having too many sounds played at once, thus the decision was taken to concentrate only on important sounds and importing them. Some sounds had to be created by modifying using effects some sounds already downloading. That for instance was how the time-travel effect was created, as during my time as a guitarist in a band, after recording one song, the lead-singer who knew how to produce showed me how something sounds after reversing a sound snippet, reverbing it and then reversing it again. It gives a distinct haunted sound, which seemed perfect for the time-travel effect. One sound that was tried to be integrated but that had too bad a snippet was a sound for riding a bicycle, as it was difficult for us as developers to distinguish that sound without being told beforehand, let alone a playtester. All sounds were downloaded from the free library Freesound.org and then normalized, modified if necessary and converted if necessary to .wav format using Cool Edit Pro 2.

For music, quite some time was taken in order to find the appropriate instruments on a music composing software and then finding inspiration. For the first prototype, only the in-game music was finished, while for the final release-candidate version two more musical creations were made. The menu music was made with the intention of having something sound close to "elevator music", music that sounds pleasant for the ears but that does not draw the players attention, as it must slip into the subconscious. The game-music follows the same feeling, only the intro music sounds different as it must convey a mood. Music that conveys a mood must use the right key, so that it can deliver the proper mood, as all keys can convey a certain mood, and for each key there are modes, each mode starting forth a different emotion. Using a minor key, or the hypolydian mode of a major key, helped produce a sad mood, with a couple of backing

instruments acting in syncopation, adding to the feeling of anguish and desperation, slowly trying to convince the player on both a conscious and subconscious level to turn to activism. All music was created using Ableton Live and its pre-installed instruments. This was followed by sound editing in Cool Edit Pro 2 to bring it to an .mp3 format, as Ableton exports best in .wav format..

Besides these, my responsibility also included having the team logo created and vectorizing and refining the game logo, which is shown on the intro screen of the game.

5. Testing

Being part of the playcentric approach, testing was vital to the production of the game as it would point out what works and what does not, as well as indicating what is fun and what is not. The game would then perform testing in two parallel areas: the course and the Imagine Cup.

The first test came from the judges of the Imagine Cup where the concept was sent, and it was positive, as we passed through the next round, though there was no feedback given.

The next part of the process was the second round, which needed an alpha version in three weeks, date which was earlier than the course-required prototype workshop. With hard-work, however, that deadline was reached and the first feedback came from the class attending the Serious and Persuasive Games course, on the 28th of March 2012, which coincided with the first week after daylight savings. Among the feedback received, was the fact that the dialogues seemed too obvious, there is a lack of a solution sound at the end of a puzzle, lack of obvious differences between the states, lack of explanation of the time-travelling effect and the disruption of the game by the newspaper. In order to address these the decision was taken to: have an icon that shows the player's state in the top-right corner of the screen; replacing the newspaper with a computer that gives players hints on what puzzle to look for and lastly, implementing a tutorial in the first screens to explain the time-travelling effect to a new player.

A week after the class presentation, feedback from the Imagine Cup team was received. The following is the actual feedback received via e-mail:

"I enjoyed the concept behind the game. It's reminiscent of old PC adventure games, and I think that genre is very fitting with the subject matter. It was difficult to grasp the mechanics without reading through your storyboard and watching your video. It was particularly confusing when the garbage bags kept coming back early on. Something should have been done to emphasize the fact that it was supposed to be a different day. I enjoyed the thought behind the time traveling concept. It really drove home the idea that prevention is the best solution. Overall, some areas need a bit more polish, but I really like the idea behind the game. I hope you all continue working on it!

Very nice idea and very good implementation that really showed how the idea really works. The video was also very well made and I liked a lot that video wasn't only about the game but contained you guys explaining about idea. Game itself was very well made. Only thing that I would have wanted to see were some instructions in game and sound effects."

As a result, after this e-mail a lot of possible sound effects were put on a list to try and populate the game with sound effect not as much as possible, but as effective as possible, in order to have feedback in different places. Among these, for examples, is a faucet closing sound, that acts as a positive feedback to a player that the running tap puzzle in the second screen of the house is solved.

On the 25th of April, the course featured a prototype workshop where groups would present their prototypes and have a sort of playtest. The results from this helped provide the

content necessary to create a form for the last round of playtest before the deadline, a playtest that would be mainly for screening out bugs and other errors as well as providing more observation on the general behaviour of players in order to better anticipate a new players course of action and make the puzzles both more obvious and more easy to solve. This final playtest was called in on the 2nd of May, the deadline being the next day. With an online form providing the information needed, and all the written results and buglist after the playtest, the stage was set to fix what was to be fixed and create a release candidate version.

A final playtest during the lectures was on the 9th of May, where playtests necessary for evaluation could be made, though ours was not that much the case, having made a couple of playtests beforehand. All of these playtests made the game look, according to Valentin T. Scherfig "like a finished game".

The playtests had a result in the playtesters as well. Through a form filled at the end of the tests, the testers have noted that they have all learned something while playing the game and that the game has influenced them in taking a more active approach in their surrounding regarding the environment. Thus, from an objective point-of-view, the game has succeeded in having people learn about different situation in an environment in an extrinsic way, as they are not being told to learn, but the situation is so that learning happens subconsciously through experience.

To sum up, as a result of the playcentric approach, the best evaluation method was through playtesting, even though Microsoft had its own set of evaluation criteria, because playtesters are a quick to access resource that can provide valuable information and reveal bugs in places not before thought of, at the general price of a cookie, chocolate or other sweets. It is evaluating the game through playtesters that helped have the game finished on time, and actually finished in entirety.

6. Conclusion

To conclude, Green Time is a game that has hints of activism and that has its players learn extrinsically what problems there could be around them regarding the environment. From a personal experience, the complicated issues of ethics, different learning types and an insight into what serious and persuasive games are is what has been learned from a theoretical perspective, while from a practical perspective, it has given greater experience, both to myself and to the team, especially by participating in an international competition, participation which had to deal with tough deadlines that were met each and every time, feat possible only by the amount with which the team was committed to the project and contest. Besides this, Green Time itself is new to the environmental activism sub-genre, as currently most environmental activism games are either intended for small children, such as Honoloko (2004), or strategical games, such as Fate of the World (2011). Green Time comes up with a different take and perspective on the problem of the environment by taking the problem to a very personal level and having the player think to make a difference.

7. Bibliography

Fullerton, Tracy. *'Game Design Workshop. A Playcentric Approach to Creating Innovative Games'*,(Gama Network Series). 2nd edition. Morgan Kaufmann, 2008

Gaver, Boucher, Pennington, Walker. Cultural Probes and the Value of Uncertainty. Interactions, Volume CI.5, pp. 53-56

Malone, Thomas W., 'What makes things fun to learn? Heuristics for designing instructional computer games' Xerox Palo Alto, 1980

Roxby, Phillipa, 'Are Apps the key to revolutionizing autism learning', BBC. London, January 2012, <http://www.bbc.co.uk/news/health-16534678>

Sicart, Miguel (2009). The banality of simulated evil.

Winn, Brian (2007). The Design, Play, and Experience Framework.

Games:

BRAID (2011), Microsoft game studios, PC

HONOLOKO (2004), World Health Organization & European Environment Agency, PC

FATE OF THE WORLD (2011), Red Redemption Ltd, PC

EVERY DAY THE SAME DREAM' (2011), Mollenindustria, PC

Movies:

Groundhog Day (1993), Harold Ramis