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Planet Dearth: A Persistent Alternate Reality Game

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by

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Abstract

This MQP is a persistent alternate reality game. Alternate reality games are innovative games played across a variety of media in real time with the intention of immersing the player. Persistent alternate reality games are ones in which any player may start playing at any point in time. We wrote an original story, adapted it to the sequential style of the game, and created puzzles through which the game is played. When the game was fully-playable, we recruited playtesters and had them test the game. Finally, it was released to the public.

Authorship Page

This report was the result of a group effort by our entire team, and represents our combined efforts and writing. Although one person was the primary author of each section, these sections were reviewed thoroughly by the whole group.

Kyle Hess created the majority of the story assets, dialogue, and written assets.

Alexander Wack created the majority of the visual assets and website aesthetics. Tamlyn Miller created the Flash applications, database, and website scripts.

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Chapter 1: Introduction

The Information Age gives birth to new technologies every day, and with new technologies, hardware becomes more powerful and smaller in size, while software becomes more robust. And with new technological advances come new forms of media through which artwork, entertainment, and even business models can operate. We live in a time when the video game industry is reaching new heights, as it has become more profitable than the perennial powerhouse of the film industry. Through the years, video games have been assaulted with false claims as a kind of stagnant, intelligence-stifling obsession, or an aggression-invoking violent hobby. Despite these setbacks, games are being embraced more and more by all facets of society. These days, with most people carrying cell phones, having access to high-speed internet at home, and generally living technology-laden lives, the enduring rigid line between games and other media is quickly becoming blurred. In the last ten years, the popularity of the internet has skyrocketed, resulting in new techniques in the portrayal of rhetorical devices, including fiction. Television shows encourage their viewers to visit website filled with activities related to the shows' content. Special edition DVDs contain mini-games for children to play with the remote control. There is, however, another phenomenon rapidly occurring in our time that is much more interesting: the blurring of the line between video games and reality. The convergence of the two communities, one focused on gameplay and one focused on fictional narratives, has spawned a new genre of interactive fiction: the alternate reality game.

Alternate reality games, or ARGs, are games that are played through a diverse variety of media outside the scope of traditional computer and console video games. They make use of websites, online videos, audio, and even physical activities like phone calls and packages in the mail. The purpose of an ARG is to immerse the player in a fictional story that occurs in their

personal reality. Puppet masters, as the makers of ARGs are called, create fictitious websites and puzzles for players to complete with the purpose of convincing the player that the content could in fact be a part of the real world. ARGs have become increasingly common as advertisements for products, and they have been around long enough to have attracted dedicated audiences for the style of gameplay. As they become more and more common, it is harder for the puppet master to convince his players that the content is real. Indeed, there are players who are openly looking for ARGs. This has led to the “This Is Not A Game” principle in which players know they are playing a game, but will allow for a certain suspension of disbelief as long as the puppet master does his or her best to hide the fact that it is a game. For example, ARGs have disclaimer pages stating that the ARG is fictional, which most players accept out of necessity. However, if the puppet master were to break the fourth wall by advertising the ARG as a game instead of a “real” organization or document, players would be disappointed.

1.1 Persistent Alternate Reality Game

We decided to make an alternate reality game because of the genre’s rising popularity, and we felt that it would be valuable to have experience in the spectrum of media that ARGs require. In addition, we added another detail to our project: persistence. ARGs generally are community-based, one-time events. If the player is not aware of the game when it starts, the player will miss out on some part of the experience due to the progress of the community of players. The player must also monitor the ARG in accordance with the pace of the game. If the player misses a relevant post from the community, the player may effectively waste time and energy completing a puzzle that has already been solved by other players. In most ARGs you can look through the content after the game has run, but you do not get the immersive experience

or urgency that comes with playing it live. A persistent ARG is one that is not tied down to any specific time frame, but can be played at any time by any player. Additionally, neither the puppet master nor the player can rely on a central meeting place for players to discuss and help each other with the game. Thus, our game has no specific time frame and is tailored for the individual player. (See Appendix I for descriptions of persistent alternate reality games that our group used for research)

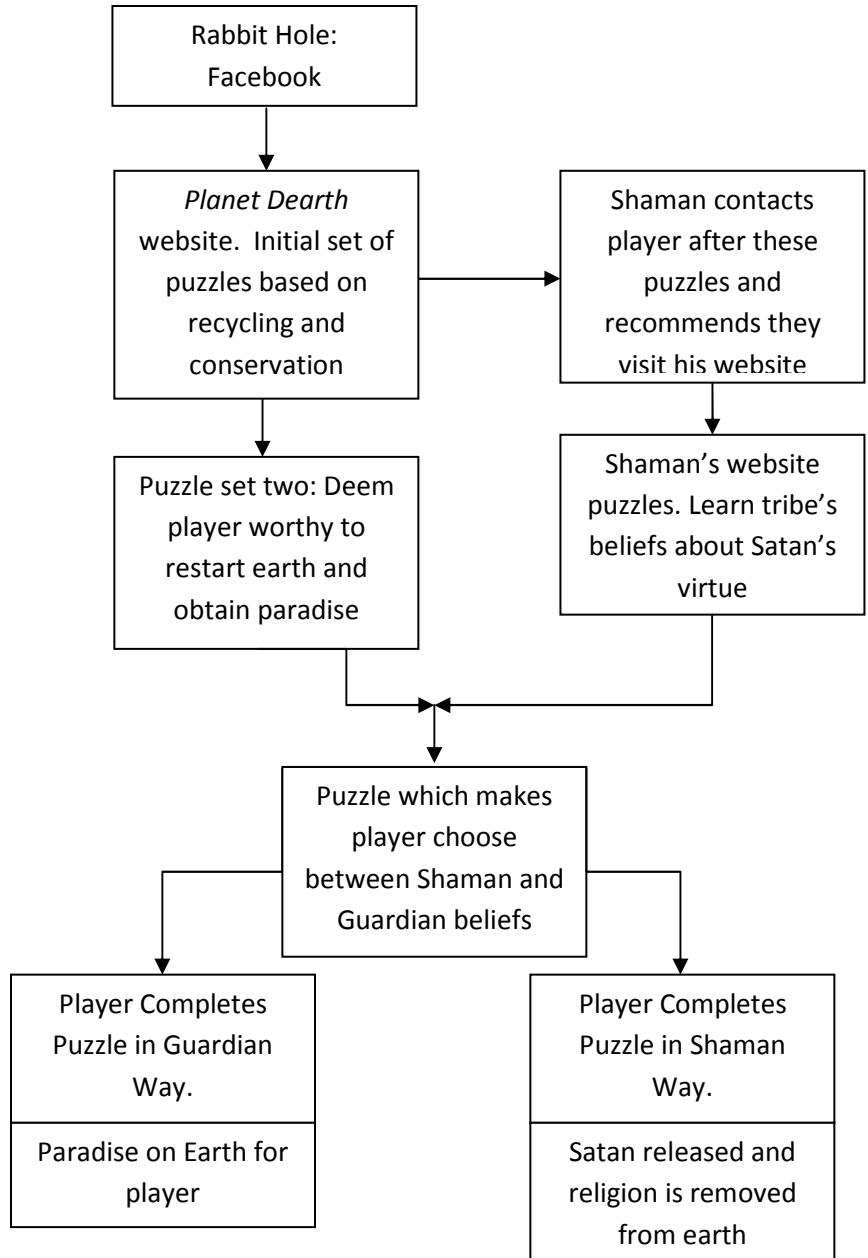
1.2 The Storyline

Our persistent ARG revolves around a current issue: recycling and conservation. There are two main characters in the game, although the characters are actually organizations. Planet Dearth presents itself as an organization advocating the better treatment of our planet and all its facets. Beneath the surface, however, Planet Dearth is a celestial assembly of God and his angels trying to wipe out Earth's population to start over anew, similar in scope to the Biblical flood. They are looking for one member of the human species to prove himself/herself worthy of the honor to begin the new race of people after the cataclysm and live in an Earthly paradise. The other character is the Weavers of the Canvas. The Weavers present themselves as a group skeptical of Planet Dearth and their true intentions. Their website contains references to Satan. However, underneath the surface, they believe in Satan not as a demonic force, but rather as the angel who was most faithful to mankind. They believe that God is a horrible tyrant, who has been mercilessly killing millions of people throughout history.

Our story was written in such a way that neither character is the good or bad force, but rather the player must use his or her own discretion and beliefs to determine who to side with. At the conclusion of the story, the player must choose between the sides. There is no right or

wrong choice, no win or lose situation. The player must simply decide which side their personality more aligns with.

1.2.1 Story Flow Chart



Facebook Quiz Rabbit Hole: A quiz will be made available on Facebook that alerts the player to their natural level of conservational tendencies. The quiz will be posted on ARG websites like Unfiction, and eventually spread from player to player through the newsfeed on facebook. The rabbit hole eventually leads to the Planet Dearth website and is the first of two general environmentally-themed puzzles the player completes.

Planet Dearth Website: After completing the Facebook quiz, the player is taken to the Planet Dearth website. The website represents the Guardian's false front as an environmentalist organization, and acts as the hub from which all Guardian puzzles will stem.

Weavers Contact player: When the player has completed the initial environmental puzzles on the Planet Dearth website, the shaman contacts the player via email and attempts to direct him or her to the Weavers of the Canvas website.

Weavers' Beliefs: The shamans teach the player their Satanic beliefs. They believe Satan actually cares more about men than God does.

Planet Dearth Puzzles Testing Player's Worth: The second set of Guardian Puzzles, which can be completed at the same time as the shaman Puzzles, are meant to test whether or not the player is worthy of representing the human race. As the player completes puzzles, they are given rewards revealing God's intention to recycle the Earth to further imprison Satan.


Final Ultimatum: At this point, the player knows that Planet Dearth wants to reverse the poles, effectively killing everyone, and recreate the Garden of Eden paradise. He or she also knows the shamans want to release Lucifer from his two prisons so that he can battle God, and eventually free the world of religion. This plot point manifests a puzzle, as the player knows all relevant information and must make a choice.

Planet Dearth Solution: The player receives a message from the Guardians. In the near future, when the current cycle ends, Satan will be imprisoned for another cycle of the Earth, and the player will be rewarded by being placed in the Garden of Eden.

Weavers Solution: The player receives a message from the shamans. In the near future, when the current cycle ends, the Earth will not be recycled. Instead, Satan will be released from his prison and will take the battle with God to a distant part of the universe. In the aftermath, the world will be saved from God's reign and religion.

1.3 Puzzles and Activities

Facebook Quiz: The quiz is a personality-style series of five questions. There are nine possible outcomes, each of which gives a personality diagnosis as relates to recycling and conservation habits. After the description of each outcome is a link to www.planetdearth.org; there are no incorrect answers to this puzzle. This quiz functions as our rabbit hole.



What kind of environmentalist are you?
Find out your personality as relates to saving the environment.

1. What do you most commonly think about on a day to day basis?

- How can I best fit in?
- How can I get out of school today?
- Where's my boyfriend/girlfriend?
- How much is gas going to cost today?
- Can't we just talk about bland, uncontroversial topics instead?
- Who needs electricity?
- What clothes am I going to wear?
- How am I going to die?
- When can I get home and meditate?

Facebook Quiz, Rabbit Hole

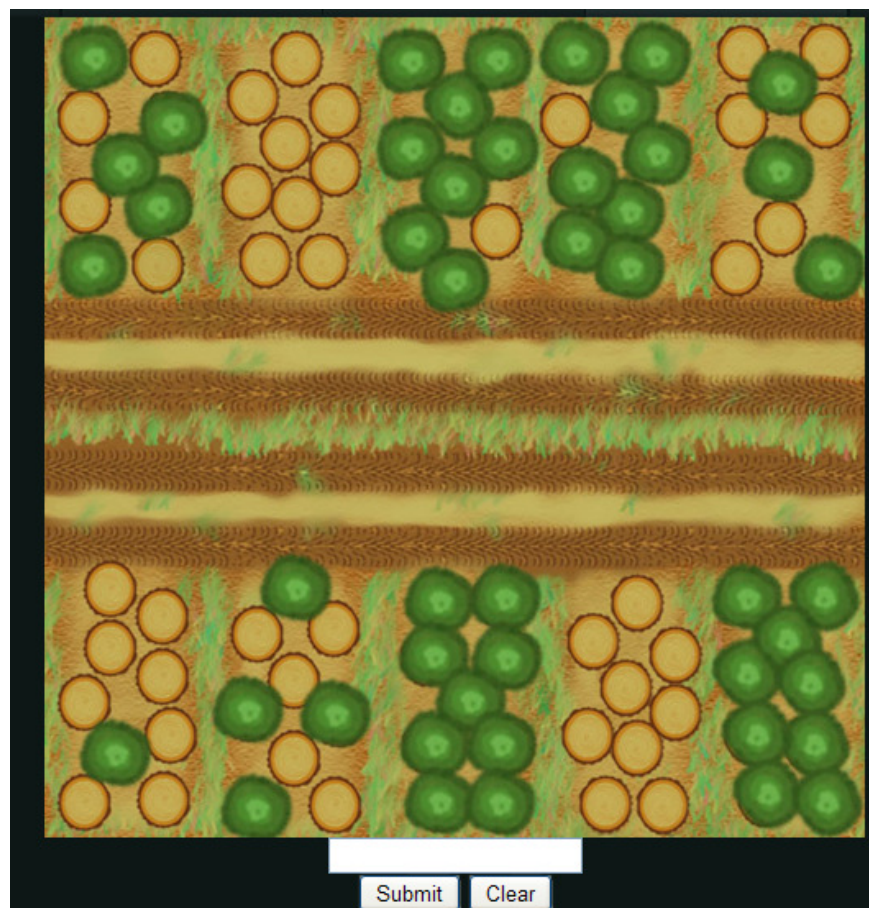
Quote Cipher: The quote cipher puzzle is a quote relating to the environmental theme of the website which has been scrambled in a specific way. The scrambled quote is presented to the player, as well as a full alphabet and a recycling symbol button. The player must select two letters and click the button to swap them, and within the quote itself the selected letters will be swapped. This must be performed until the original quote is discovered. The original quote is: “Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.” ~Chief Seattle, 1855



Quote Cipher Puzzle

Tree Matrix: The tree matrix puzzle is presented to the player as a still image. There are 10 arrays of tree stumps, with each array containing 9 stumps. Five arrays are at the top of the image in a row, and the other five arrays are at the bottom of the image. Some of the stumps have foliage and thus represent trees that have not been cut down. The file name of this webpage

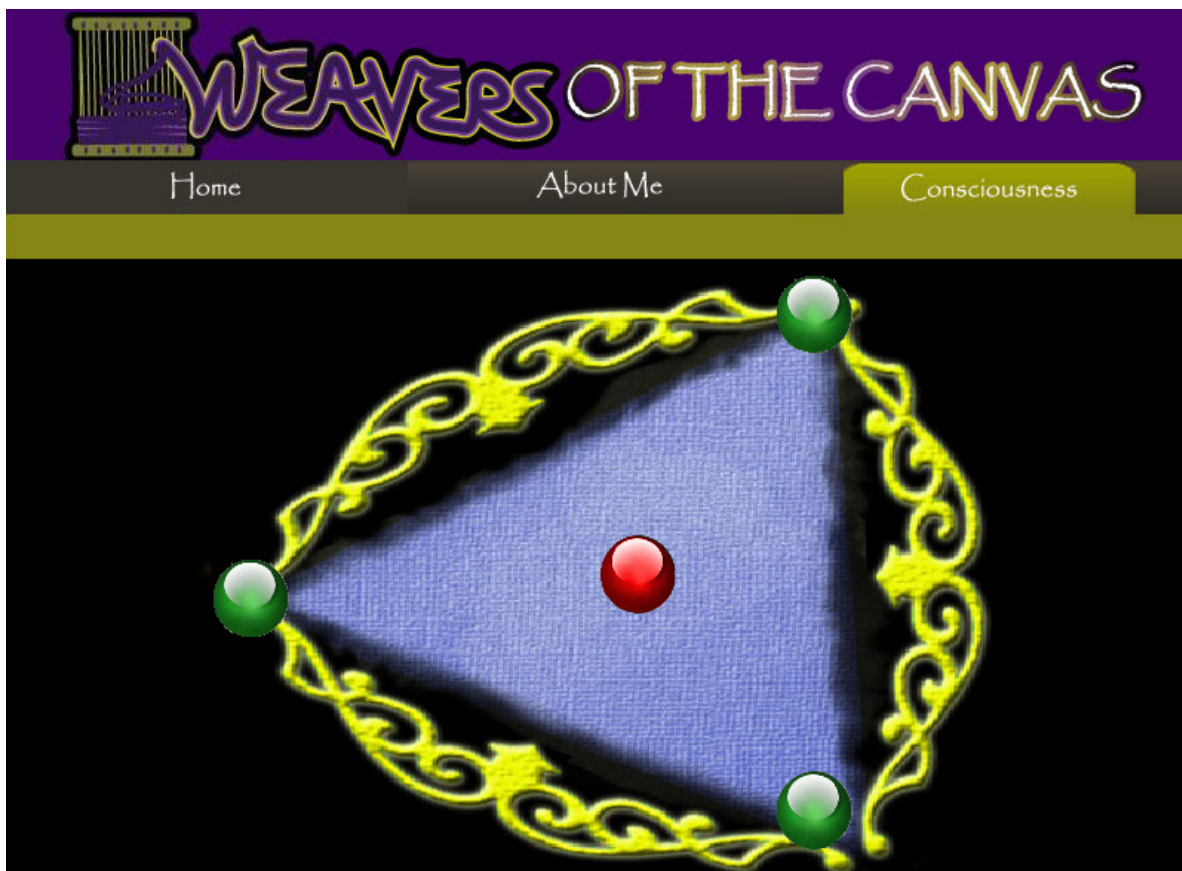
is “livetrees”, suggesting that the number of standing trees leads somewhere. Counting the trees, the player finds a ten digit number that is actually a phone number. When the player calls the phone number, they discover a prerecorded voice message that gives them the final solution to the puzzle. The phone message given to the player is, “We’re pleased you’ve made it this far. You appear to have found the path; though it is ancient, it is well-traveled. Proceed with caution. From here on, your shoulders bear the burden of good and evil. Refer to THE BOOK to find your next clue.” The phrase, “THE BOOK”, is the final solution.



Tree Matrix Puzzle

Triangle Gateway: The triangle gateway puzzle is both a basic puzzle and a hub from which the other Weavers of the Canvas puzzles stem. This puzzle consists of an image of a triangle with orbs in corner. There is also an orb in the center of the triangle. Clicking on any orb

changes its color. The central orb is repelled by any outer orbs of the same color. The central orb is also attracted to green orbs if this orb is red and red orbs if this orb is green. Grey outer orbs are ignored by the center orb. If the player aligns the central orb with any of the corner orbs, the central orb begins to glow. At this point, if the central orb is clicked, the player will be redirected to either the Reversed Audio puzzle, the Ages of Man puzzle, or the Floating Orbs puzzle.



Triangle Gateway Puzzle

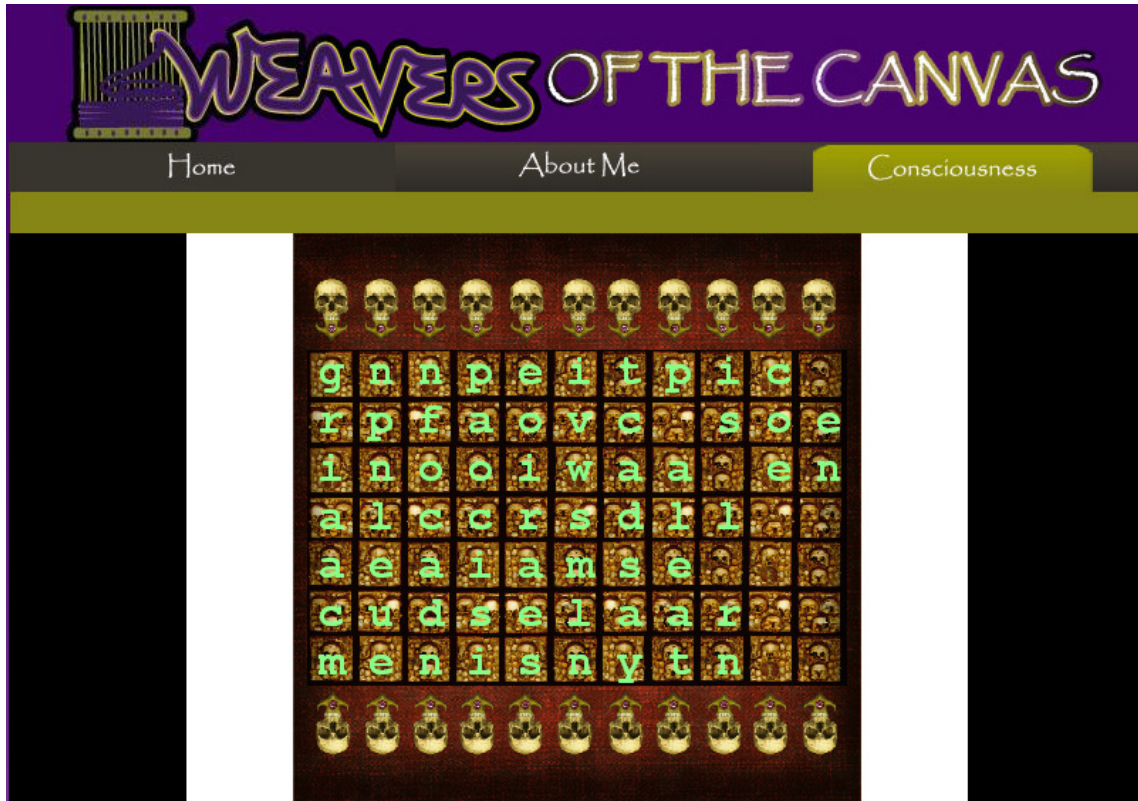
Floating Orbs: In this puzzle, a number of orbs move around inside the box. When the player manages to click one of them, a short text hint shows up for a limited amount of time. The player must use the hints to run an online search to find the term to which all the hints connect. There are three phases of this puzzle. The first phase's solution is "triangle", and the hints given

are “acute, obtuse, right”, “recycle symbol”, and “180 degrees”. The second phase’s solution is “devil”, and the hints given are, “evil creature”, “Bermuda”, “Florida”, and “Puerto Rico”. The final phase’s solution is “dragon”, and the hints given are “Formosa”, “mythological creature”, “Western Japan”, and “Bonin Islands”.



Floating Orbs Puzzle

Ages of Man: This puzzle consists of a 7x11 grid. Each grid box contains either a letter or a blank space. There are buttons above and below each column. Clicking on a button above any column rotates the characters in that column up, while clicking the bottom button does the opposite. The player must rotate the columns in the correct order to spell out the seven ages of mankind, which are as follows: ancient, classical, medieval, gunpowder, renaissance, information, and apocalypse.



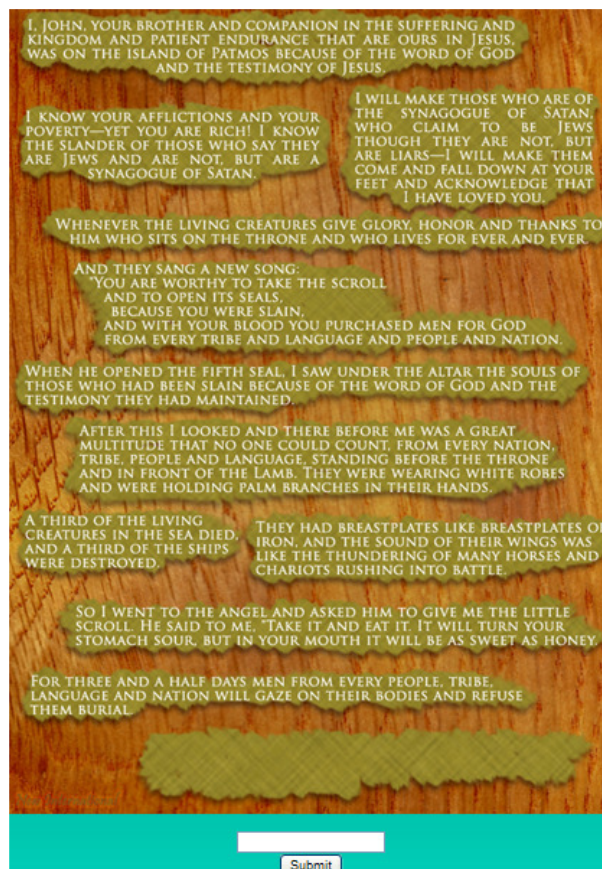
Ages of Man Puzzle

Reversed Audio: This puzzle consists of a Satanic pentagram, inside which is a triangle representing the “play” function common on most audio electronics. When activated, the puzzle plays a recorded voice message that has been reversed. The audio file is also available for players to download. The player must reverse the audio and run an internet search of the text to find the author of the words. The solution is the author’s full name, Anton Szandor LaVey.

Bible Verse: This puzzle is given to the player as a still image with twelve distinct pieces of text. The texts are verses from the Book of Revelation. The verses given are 1:9, 2:9, and so on until 13:9. However, 12:9 is missing. The player must determine the location from which the verses came in order to determine the missing verse.



Reversed Audio Puzzle



Bible Verse Puzzle

Danger of Need: The Danger of Need puzzle is given to the player in the form of an image.

The image appears to be an ancient book and contains several passages referring to a story very

similar to the creation story in the Garden of Eden. The phrase “Danger of Need” is repeated several times, and the passage ends with the question, “what is the Danger of Need?” The Danger of Need is an anagram for the Garden of Eden, which is the solution to this puzzle.

Man's fatal flaw, the flaw from which all his subsequent defects stem, is his thirst for things. Life on Earth is a spiritual examination of sorts, and material objects exist for the sole purpose of preoccupation. The natural order of things involves man living on Earth on equal footing with fauna and flora. He should place importance on no being. The mere concepts of superiority and inferiority are consequences of man's greed.

Originally, the Guardians enacted God's will and granted man a paradise on Earth. Man was placed in an ecosystem in which everything was provided for him, and he could live a simple, pleasurable life. In this meticulously preordained milieu, man was given every opportunity to prove himself as a being worthy of residence on our great planet. To stray from the path afforded him would be a definitive ill omen for man's future.

And that is precisely what man did. He left the confines of his divine abode, wondering what lay outside its bulwarks. What he found was a land of suffering, torture, and pain. And he liked it, for it was of his own bringing. The gates fastened at his back, and his fate was sealed.

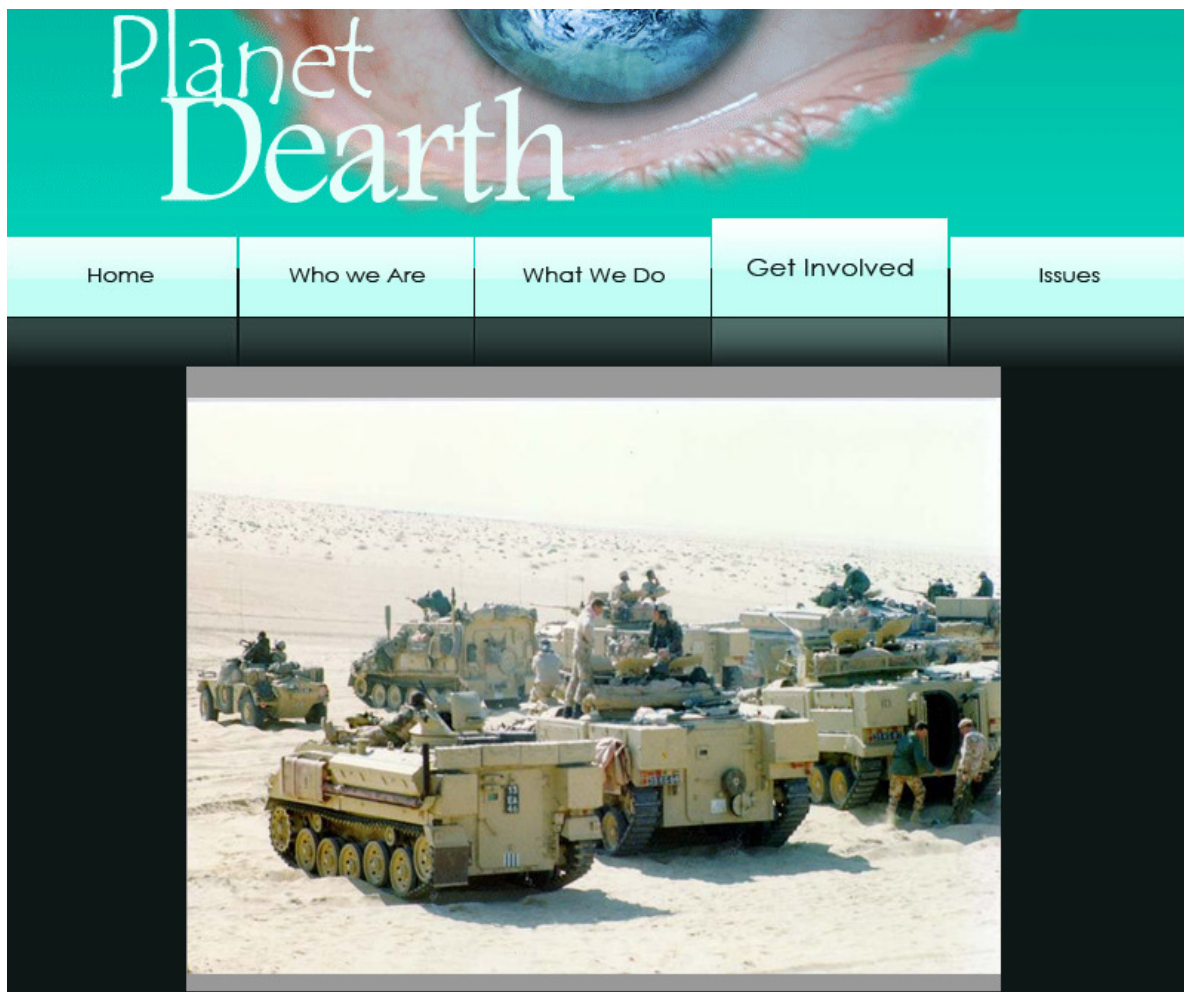
Man's mysterious past can be found within the

Submit Clear

Danger of Need Puzzle

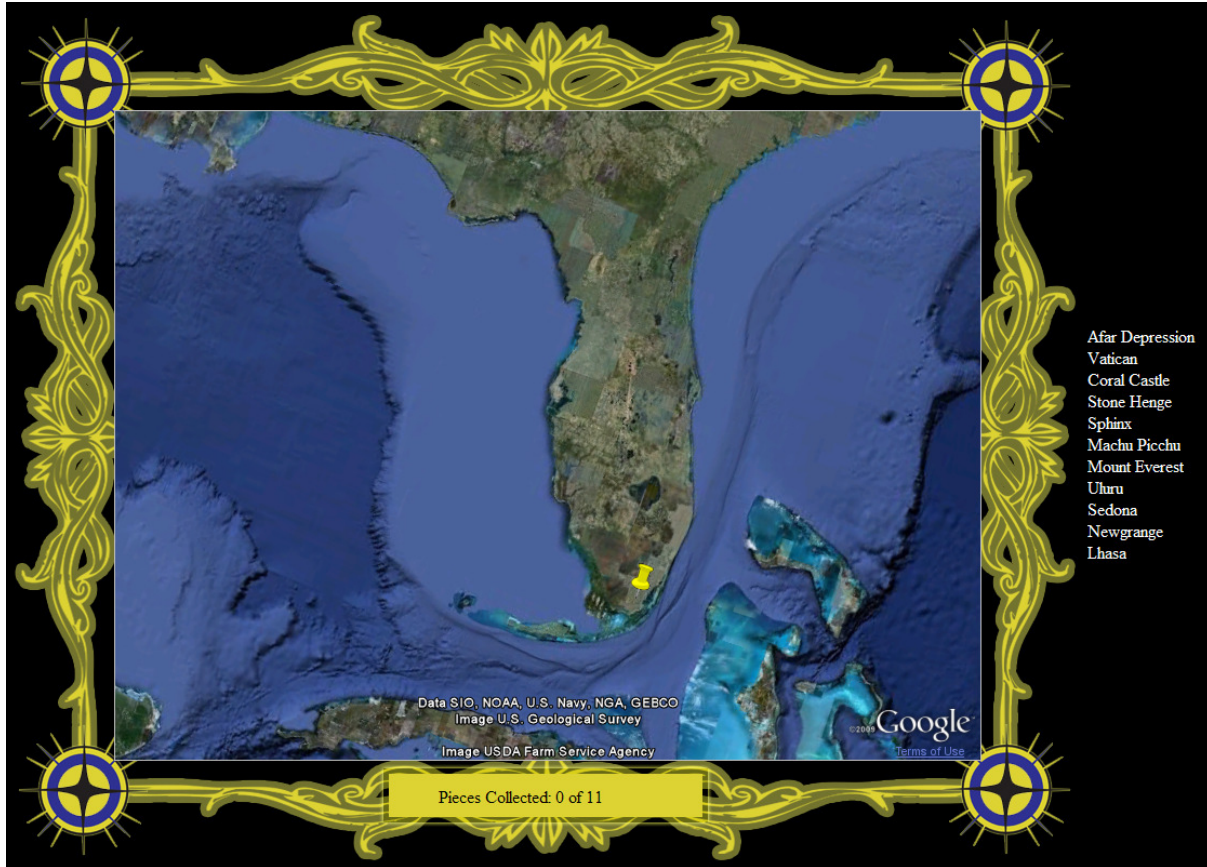
Apocalypse: This puzzle is in the form of four short flash movies. Each movie consists of a slide show of five images. The images depict scenes referring to the four horsemen of the

apocalypse. The player must enter the correct horseman (pestilence, death, war, or famine) on each slide show in order to proceed. The answer to the example below is “war”.

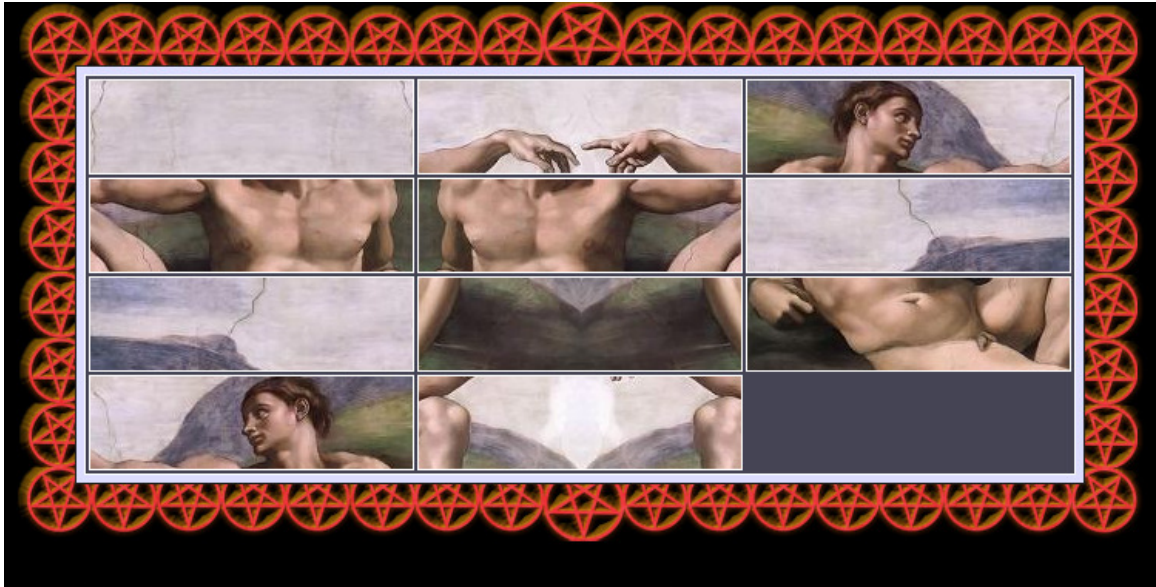


Apocalypse Puzzle

Final Puzzle: The final puzzle consists of two parts, the first being a custom, embedded version of Google Earth. On the side, in list form, are 11 specific locations on the planet. The player must zoom in enough to find each location and collect the puzzle piece associated with it by clicking on the pushpin. When all the pieces have been collected, they are brought to a new window with two sliding block image puzzles to solve; this puzzle is the second part of the final puzzle. The player chooses a side (Planet Dearth, Weavers of the Canvas) by solving that organization’s block puzzle.



Final Puzzle, Part 1



Final Puzzle, Part 2

1.4 Art Assets

In addition to creating art for every puzzle we had a few additional major assets which needed to be created, including our websites and the reward movies.

1.4.1 Websites

We took a very traditional approach to designing the websites, taking into consideration both aesthetic appeal and also the back-stories behind our characters. For the Planet Dearth website, we aimed to have it resemble a burgeoning environmental corporation's website in both layout and theme. We studied a number of environmental group's websites, including; Greenpeace, the World Wildlife Foundation, and Sierra Club. From each of these sites we chose to try to emulate a few key features, such as Green Peace's rotating news section, the Sierra Club's prominently placed logo and slogan, and the WWF's navigation bar. With these key details in mind, we found a basic template online from which to expand and build the site on. As we had no prior web-design experience, this template provided us a starting point and a reference for us to use as we expanded upon the basic design.

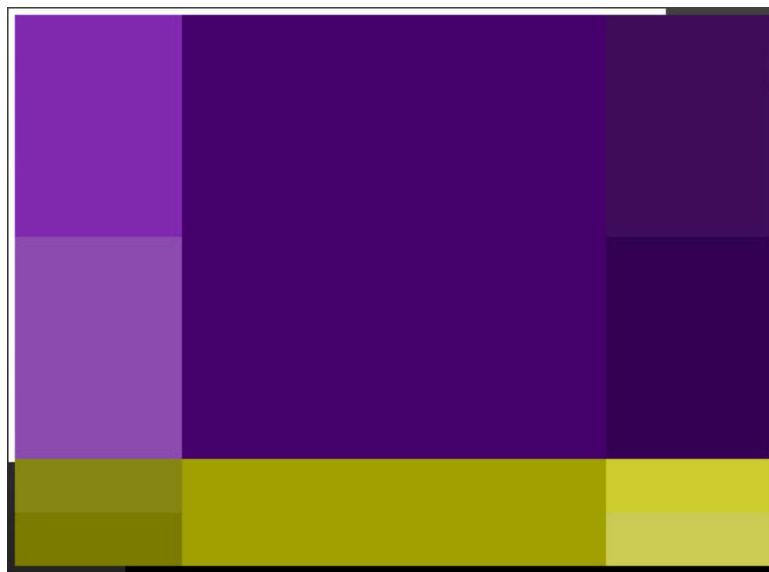
For the Weavers of the Canvas website we tried to go for a completely different style. Whereas the Planet Dearth website was meant to represent a powerful organization, Weavers is the website of a single author who is sharing his thoughts with the world. Obviously this background would be ripe for a blog-based site, for which there were a number of appropriate references. The inspiration for this site was the basic *Blogger* page, complete with a minor navigation bar, a title, and then a stream of consciousness written by the site's author right on the home-page.

After we decided on the layout designs for the websites, we turned our attention to choosing a color scheme which would be both aesthetically appealing and feel relevant to the

characters responsible for each of the websites. Using colorschemedesigner.com we created a number of possible color combinations for both websites. After narrowing the choices down to 3 palettes for each website, we ended up picking a compliment theme for Planet Dearth with a bright teal and bright orange color, and a compliment between bright purple and yellow/green for the Weaver's site.



Planet Dearth Color Scheme



Weavers of the Canvas Color Scheme

During the course of the sites and our game's creation, however, we ended up stripping a number of features out of each website. Because of the nature of our game, a number of key features of the reference sites couldn't be included in the game websites. This included Banner Advertisements for other conservation groups and charities who may not appreciate being patron's for a fake environmentalist group, as well as the "Donate to Us!" links which we chose not to include for fairly obvious legal and ethical reasons.

Aside from the two monetarily aimed components, we chose to remove a few more minor details from our initial site designs. For example, the Weaver's site originally had a "Recent Posts" box which would contain links to recent blog updates by the author. This section was removed after we decided to shy away from the idea that the Weaver's site would be one person's blog, allowing for an air of mystery about this character. It was this same reasoning that led to the removal of the navigation bar on the Weavers site as well; originally we were going to have sections of the website which would act as a biography page of sorts for the author. However, we cut out these additional pages and thus it was impractical to have a navigation bar as there were only two sections of this website now (in addition to the puzzle sections).

We also chose to cut a few sections of the Planet Dearth website as well. Most notably was the "News" box which would be prevalent on each page. This area would contain recent news relevant to the environment and conservation. This section was pulled in favor of the rotating "picture" news flash section on the front page which was more interesting to look at and brought another element of legitimacy to the website.

1.4.2 Movie Rewards

Early on, we decided that the best and most intriguing way to tell our story would be to reward the player with movies, which told portions of the story. Later we decided that the best

way to reveal these movies to the player would be as a reward for each puzzle they completed. After planning out the sequence of puzzles, and dividing up the story into digestible pieces we ended up with eight separate mini-moves to convey the story to the player. Three movies were rewarded from the Planet Dearth website, three from the Weavers of the Canvas website, and one of two final movies depending upon which side the player chose in the final puzzle.

We decided to go with Ken Burns' style approach to filmmaking for the six initial reward movies. This style was popularized and perfected by documentarian Ken Burns who uses a similar technique in all of his documentaries which cover topics for which there is little or no video record of, such as the Civil war or American Jazz history. Burns' technique involves taking a number of interesting and relevant still images and panning them across the screen in sync with a background audio track which narrates and explains the images. By moving the images around, zooming in and out of them, as well as focusing on specific parts of the image, this effect can be used to create movie with a serious of still images as intriguing as actual video.

The first step in the creation process was the narration script which would be played in the background of the movies. With this basis for the movies, we then selected over 35 images to use throughout the movies which we would use to bring life to the script. These pictures consisted mainly of religious-based paintings and drawings which we found through creativecommons.org image search, meaning they are royalty free and open for repurposing.

With scripts written and images found for each of the reward movies we then moved onto finding "voices" for both Planet Dearth and the Weavers. For the Weavers we chose to go with a computerized text-to-speech voice, as it furthered the air of mystery around the Weavers character as well as the inexpensive but effective theme prevalent in the Weavers website.

For Planet Dearth we decided to go for an even creepier, yet familiar style of narration. Because we wanted the players to think there was a large group of people with religious ties behind Planet Dearth, we chose to have the narration read in a chamber-singing style on top of a harmonizing tone in the background. This made the narrator sound like they were reading from a religious book while being accompanied by a number of support singers harmonizing to convey this story to the player. We then recorded the audio in these styles which provided our finished background tracks for both sides of the movies.

For the final movies we took a lot of inspiration from the “Message to Scientology” from Anonymous video. In this video the authors send an anonymous but powerful video to the leaders of the church of scientology by playing a similar sounding text-to-speech voice on top of a time-lapse video track. This video served to both shroud its creators in an undeniably creepy veil of anonymity, while at the same time using the time-lapse video of the sky to instill within the viewer a sense of importance and urgency while at the same time strengthening the ominous aura of the audio tracks. The video for the final movies was footage of the Worcester sky recorded by our team over the course of a weekend and then sped-up in editing to appear as though it were time-lapse footage of the skyline.

1.4.3 Written Content

With the nature of our game, written assets were required throughout. The content of the Planet Dearth website was custom written, designed to resemble content on websites like that of the World Wildlife Fund. On the Weavers website, about half the content was custom and the other half was borrowed from places like *The Satanic Bible*.

Short scripts were written for each movie reward, totaling eight. The writing for the Danger of Need puzzle was also created specifically for the game.

1.5 Technical Assets

The technical assets required for this project focused heavily on programming the puzzles and the Flash games and applications associated with them, website functionality, and the integration of the art assets into the puzzles.

1.5.1 Flash-Based Puzzles

The Quote Cipher puzzle required a Flash game incorporating the ability to display a string of characters (the quote) and have the string's characters be replaceable. This game also required buttons for each letter and a button to actually swap the letters in the quote. The Triangle Gateway puzzle required a Flash game with functionality including orb attraction, repulsion, color change, and redirection to other websites. The Floating Orbs puzzle required random orb movement and the ability to display text when clicked. The Ages of Man puzzle required buttons that would rotate specific characters within strings. The Reversed Audio puzzle only needed a button to play the reversed audio. The Apocalypse puzzle required four separate slide shows with functionality allowing for keyboard entry to type answers.

1.5.2 Web-Based Puzzles

The Tree Matrix, Floating Orbs, Reversed Audio, Bible Verse, and Danger of Need puzzles all needed text input boxes that require a specific word when the submission button is clicked on their respective web pages. This task was accomplished by using HTML to create the

submission forms and JavaScript to have a function to check the players' responses for correctness. The first part of the final puzzle required implementation of the Google Earth API with JavaScript. The script needed to allow for locations to be marked on the Earth model and for the locations to be invisible until the player zooms into the locations. Also, the script had to change HTML for the player to view the appropriate changes as the game progressed. The second part of the final puzzle required the implementation of the jqPuzzle API to create the sliding image puzzles.

1.5.3 Website Functionality

In order for the game to have a working login system, an SQL database was required. The two websites had their own databases, storing the players' emails, passwords, and game completion information. Passwords are encrypted using the md5 function in PHP. Also, in every web page involved in the puzzles, PHP was used to require the player to be logged into their account and to also be at the right spot in the game; this prevents players from skipping ahead of the game. Also, at two points in the game, when the player first registers and when the player completes the Quote Cipher puzzle, the website sends email to the player using the PHP mail function.

Chapter 2: Analysis of the Process

2.1 How a Persistent ARG is Different

A persistent ARG differs in a number of ways from a traditional ARG, all stemming from the fact that the game will persist over a long period of time. Jordan Weisman, creator of one of the first ARGs, *The Beast*, compares the ARG to a rock concert. In a recent interview, Weisman said, “A true ARG is closer to a rock concert. It's a temporal event, a gathering of energies all in one place for a short period of time. And after [the game has finished], it's a bit like hearing the album from the concert. It doesn't ever have the vitality and the life of one that unfolds in real time” (Dahlen, 2008).

Like a rock concert, a traditional ARG takes place during a window of time pre-determined by the puppet master. During this window, players work together to solve the puzzles, reveling in the fact that they are a part of a once-in-a-lifetime event and hoping to make some form of contribution to the unraveling of the story.

Whereas a traditional ARG is the concert put on by the musician, a persistent ARG is like the musician's original album, it seeks to capture many of the elements and mechanics of a traditional ARG but package them in a way ideal for the single-player experience, which can be played and experienced in the same way years after its initial release.

Since there are a large number of people playing a traditional ARG, bringing with them many different ways of thinking and many different skills and abilities, ARGs must be balanced and require the group to make use of their “hive-mind” to solve puzzles. Persistent ARGs, on the other hand, aimed at the solo player, present puzzles which are solvable by an individual aided only by their own web-surfing abilities. As such, puzzles tend to be more straightforward and

less complicated in a persistent ARG as the player must be challenged, all while preventing frustration.

Another feature unique to the persistent ARG is the ability to put it down and pick it back up at the convenience of the player. Just as an audience member cannot press the pause button during a rock concert, players cannot simply pause a traditional ARG when they need to take a break. If the player cannot keep following the ARG for any reason, the puppet master will keep the game and story going for all the other members of the audience. A persistent ARG is meant to allow the player to take breaks when they need to but allows them to pick the game back up where they left off whenever they so choose.

Though persistent ARGs may lack the unique feeling of “gathering of energies all in one place for a short period of time” akin to rock concerts and traditional ARGs, they instead provide the individual with a unique, well-planned game and story, containing many aspects of a traditional ARG that can be played at their convenience.

2.2 Importance of the Storyline

After completing our persistent ARG and having the opportunity to reflect on the process, it became apparent that the story is the single most important facet of an ARG, not necessarily to the player, but to the makers. The story is the backbone of the organization that eventually manifests itself as a finished game. In addition to making an ARG immersive, the story is the basis for all puzzles and story rewards that are integral to good gameplay.

We went through several iterations of stories, which ultimately impeded our overall progress. We initially began with a story that revolved around Coral Castle in Florida and the mystery that surrounds its structures and the man who built it. We then moved to a story involving the Bermuda Triangle and the Dragon’s Triangle, which are both locations in the

ocean which are associated with various paranormal happenings. We stuck with that story for some time and even produced a significant amount of content which related directly to it. Under that storyline, only Planet Dearth had religious connotations. The opposing character, which eventually evolved into the Weavers, was a conspiracy theory group. The final change was changing that character into a Satan worshipping group to directly oppose Planet Dearth. The Weavers justify their worshipping of Satan as well as the typical Christians justify their own religions. This change cleared up several weak points in our plot, and made the overall storyline much more interesting.

Having a clear, concise storyline decided upon made the content production much less stressful and generally more efficient. A few puzzles had to be changed, or at least reworked into the new storyline. We were able to salvage most of the content that we had already created, although that might not necessarily be the case for other ARGs.

In general, the best thing to do when creating an ARG is to heavily research and decide upon a solid storyline as early in the process as possible. This eases confusion amongst group members who may have different visions of the project, and greatly helps create puzzle concepts and art and technical assets.

2.3 Creation of Puzzle Concepts

At the beginning of the design phase of our project, we collectively determined the puzzles that we wanted in Planet Dearth. Over time, puzzles were added, removed, and changed to fit our storyline, our limitations, and the general gameplay that we desired.

Facebook Quiz: Originally, the rabbit hole for Planet Dearth was designed to be a Facebook advertisement that led to the Planet Dearth website. Upon reaching the website, there would be a

quiz displaying different types of plastics, and the player would be required to select the type of plastic, based on the way it is supposed to be recycled, from a multiple choice list. We discovered that creating a Facebook advertisement would cost money on a daily basis, so we researched Facebook quizzes, which are free. Since having a Facebook quiz and another quiz immediately following it would potentially be too many quizzes for the player, we removed the recycling plastics quiz and original rabbit hole idea, replacing it with a single Facebook quiz. We wanted to give Planet Dearth more of a semblance of an environmental agency, so we redesigned the quiz to be more of a “What Kind of Environmentalist are You?” quiz.

Quote Cipher: We felt that this puzzle would be a task that any player could complete without much trouble. We also realized that this puzzle could potentially be used for either the Planet Dearth or Weavers of the Canvas websites, since changing the quote would change the purpose of the puzzle. This puzzle was placed as the Planet Dearth website’s first puzzle because this puzzle would be found early in the game and would not be too difficult to solve.

Tree Matrix: The tree matrix puzzle was designed to make the player question whether this game is actually a game. We wanted the player to be immersed in the game world, so we required the player to call a real world phone number to receive the answer to the puzzle. Since this puzzle was designed to be early in the game, the puzzle was not intended to be very difficult to solve once the pattern was discovered. We chose to make this puzzle a matrix of trees because at this point in the game, Planet Dearth is still masquerading as an environmental agency.

Triangle Gateway: Originally, we had discussed the possibility of the Bermuda and Dragon's Triangles to be a major point of interest in Planet Dearth. This puzzle was supposed to represent the triangles as well as lead into puzzles that gave more information on the triangles. Although we did not focus as heavily upon the two triangles in the story as we had initially thought, we still wanted a gateway puzzle for other reasons. We wanted all of the Weavers of the Canvas puzzles to be available at the same time, thereby allowing the player to solve them in any order.

Floating Orbs: This puzzle was inspired by *Missing Since January*; during the game, the player would encounter orbs that, when clicked, reveal a word, naming the next level. In the floating orbs puzzle, we have multiple randomly moving orbs that each, when clicked, give a different hint to a word that the player is required to submit in order to move forward. We used this puzzle to tell the player about the story's connection to the Bermuda and Dragon's Triangles.

Ages of Man: Originally a puzzle for Planet Dearth instead of Weavers of the Canvas, the ages of man puzzle was completely redesigned. We wanted to create a word puzzle that showed how the current age of man will lead into apocalypse, and then the cycle would begin again. A quote was supposed to be missing a word, and the player would need to determine the full quote and the philosopher or environmentalist who said the quote. After determining that this puzzle was too similar to the quote cipher puzzle, we redesigned this puzzle to be a word scramble with a list of the ages of man. This puzzle, now designed to represent that there is a cycle in the ages of man, where the apocalypse leads back to the ancient times, we found that the puzzle fit better with the Weavers of the Canvas, since the Weavers of the Canvas have determined that there is a cycle, and they want to break it.

Reversed Audio: This puzzle was originally inspired by music. The plan was to reverse a song and have the player determine the artist or song. We found that although reversing a sound file might make a good puzzle, using a real song would not completely work with our story. Instead we used a verse from the Satanic Bible, since we wanted the Weavers of the Canvas to be connected to Satan.

Bible Verse: This puzzle was inspired by Revelation 12:9, which contains references to the Devil and a dragon. We connected the Devil's and Dragon's Triangles, and we also wanted this puzzle to continue that theme. After discovering this verse, we needed to discover other puzzle pieces that would give the answer we wanted the players to acquire.

Danger of Need: For this puzzle, we wanted to incorporate the Garden of Eden into our game as the reward for completing the game in favor of Planet Dearth. One idea was a word scramble, and Garden of Eden is an anagram for "danger of need". This anagram also allowed us to devise a small story connecting the danger of need with the Garden of Eden.

Apocalypse: The inspiration for this puzzle came from tests involving a quick series of images that force the test taker to make a quick judgment. We modified this puzzle to instead be slideshows with associations.

Final Puzzle: The final puzzle was inspired by Google Earth and its API, as well as sliding image puzzles. We wanted to have the final puzzle take place "in the real world", and using Google Earth, we could perform such a feat in a persistent alternate reality game. We also

wanted the final part of the puzzle to require more of a moral choice than a difficult challenge, which is why we chose the sliding image puzzles.

2.4 Division of Labor

Our group consisted of three members: Tamlyn Miller (technical IMGD), Alex Wack (artistic IMGD), and Kyle Hess (artistic IMGD). Tamlyn programmed all of the puzzles and websites. He took care of anything remotely technical, from securing webhosting to acquiring the use of a WPI voicemail inbox. Because of his skill set, he did most of the actual construction of the project as Kyle and Alex supplied him with artistic content. As artists, Alex and Kyle had different skill sets that complimented each other well. Alex focused on the visually oriented content, such as images for puzzles, amalgamating video and audio in movie producing software, and designing the look and feel of the two main websites. Kyle focused on written content. He wrote the main story, as well as all text that the player sees throughout the game. He wrote scripts for the movie rewards, and he generally took care of audio. The group functioned together exceptionally well, with each member having their own position.

Chapter 3: Conclusion

3.1 ARGs Are Not Easy

Alternate reality games are much, much different from traditional video games not only in gameplay, but in the effort and skills required to produce one. From an artistic standpoint, ARGs typically don't make use of 3-D modeling or animation, which are very time consuming. They also, therefore, do not require the creation and application of textures to said models. From a technical perspective, they do not require artificial intelligence. Some might think that the absence of these features would make an ARG easier to make, but that is not the case. ARGs require an equal effort and input, if not greater, than traditional games. The type of work and breakdown of where effort is allocated, however, is much different. As alluded to earlier, the storyline is one of the most integral aspects of an ARG because it guides the entire process of creation. Much time was spent brainstorming and refining the storyline that was eventually chosen for our game. All members contributed to this process because it was so important. Another important feature relates to the "this is not a game principle" in which we, as game makers, must try to make our fictional story and assets fit into the real world. This also requires much trial and error.

In general, for anyone contemplating making an ARG, the process is incredibly involved. The typical game designer may not enjoy making an ARG, and vice versa. It requires a different mindset and approach to game making than do other games. Every puzzle and activity the player encounters must be designed to effectively present the story to the player. Much more than other games, the story is the basis of an ARG. Our group happened to have members with just the

right combination of skills and levels of motivation to make the project a success, but that might not always be the case. It would be a mistake to think making an ARG is easy.

3.2 Importance of the Planning Term

A typical MQP is spread over three terms. The first term involves research and planning, the second term is for producing and arranging content, and the third term is for testing and reflecting on the process. We can't emphasize enough the importance of the first term of the project. The first term is when the group plans, week by week, the deadlines and requirements of the next two terms. Creating a feasible and efficient plan streamlines the work process greatly. Overlooking your plans, or creating plans that will be too difficult to follow steadily, can set back your project. Tied in with the planning in the first term is the selection of a solid storyline. Our group was not satisfied with our storyline until midway through the second term, and this cost us time and effort. On the contrary, however, our group did a good job of creating achievable goals. Despite the setbacks due to planning problems, we were generally able to maintain our schedule.

3.3 Testing

3.3.1 Methodology

In order to collect the most possible information, we adopted a loose and casual testing strategy. We wanted the testers to be as comfortable with us and their play experience so that they would speak to us without restraint about issues and ideas. To accomplish this task, we allowed the players to use their own laptops to play the game, which allowed testing on various operating systems and web browsers. In addition, we ordered pizza for our testers in an attempt

to make the players more comfortable around us. Also, we briefed players with the following message: “Our game is designed to be played alone, but feel free to collaborate.” We observed all the players’ progress through the game, asked them to verbalize their thought processes in various stages in the game, and recorded any issues we noticed ourselves.



Playtesters Sarah Gilkey and Joshua Ginsburg

3.3.2 Results

Playtesting our game was both worrisome and enjoyable. On one hand, it is always a difficult process to present your hard work and effort to criticism. On the other hand, we were excited to see how people would play and enjoy our game.

During the first playtest, our main goal was to ensure that our game had no catastrophic bugs or crashes that would prevent any number of players from being able to complete it. In this sense, our playtest and game were both successes. For this playtest, we had four IMGD students with a technical concentration. Out of four testers, three eventually finished the game, while the

fourth had to leave early and was ahead of the pack when he left. The biggest problems we encountered were puzzles that were not clear enough to the player. For instance, in our Bible Verse puzzle, it became apparent that some of the verses in the puzzle appeared in multiple locations in the Bible. This was a frustrating process for the players. For other puzzles, such as the Danger of Need puzzle, there was not enough of a hint or clue to lead the player in the right direction.

The second playtest consisted of two IMGD students with an artistic concentration. The main goal of the second playtest was to ensure that the changes we made from the findings of the first playtest section both function correctly and were improvements to our older product. This playtest was also a success. We found that the game is playable, but due to the nature of JavaScript, players can skip over certain puzzles; however, the exploitation of this flaw only detracts the player's experience. In this case, the player is effectively cheating at our game. Therefore, we decided to put a warning comment inside the JavaScript files telling the player that using the information included inside the JavaScript files only serves to ruin their experience.

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Appendices

Appendix I: Literature Reviews

Books

Cathy's Book (Stewart and Weisman, 2008): *Cathy's Book* is a book-based persistent alternate reality game. It appears to the reader to be the diary or journal of a teenager named Cathy, and details her exploits as she learns more and more about her mysterious boyfriend Victor. Included in the book's front cover are various objects like opened mail, a napkin with writing on it, and a business card. In the diary, these objects are referenced as items that Cathy has collected. The reader gets to examine the objects for his or herself. The game is designed to be playable by one person, as it is a persistent. There is an online component where players collaborated and helped each other with various puzzles in the game.

In our project, we used very little from *Cathy's Book* other than the fact that we also produced a persistent alternate reality game. We took into consideration the way it handled itself, things like physical clues and an online forum, and decided against them in creating our game. Also, we borrowed the idea of calling a real phone number with a pre-recorded message.

The 39 Clues Book: The Maze of Bones (Riordan, 2008): *The 39 Clues* is a series of book-based alternate reality games, the first of which is *The Maze of Bones*. Like *Cathy's Book*, it is aimed for a young audience, although the lead characters in it are barely teenagers. The series features cards with specific codes that come with books, which the player can collect and enter online to collect all of the clues. The book itself contained very few actual puzzles, and it seemed like most of the gameplay was on the website. The website was somewhat clunky, and although it was a book-based alternate reality game, contained some things that had already been

solved. The series featured a contest in which players competed to be the first to solve all the puzzles. Players can still play through the content, but they miss out on the intended original experience.

Again, for the purposes of our project, we took very little from *The Maze of Bones*. We did take into consideration how the intended audience, young teenagers, can affect the game experience for older players. In general, it was not involving or immersive enough to entertain anyone much older than the intended audience.

The Satanic Bible (LaVey, 1969): *The Satanic Bible* is Anton Szandor LaVey's book that defines the religion upon which the Church of Satan is based. It outlines various philosophical views and dictates the ceremonies of the religion. We used *The Satanic Bible* as reference when we created the Weavers character, which advocates Satan as an angel who is misrepresented according to traditional Christian beliefs. While the views of Satan in *The Satanic Bible* share little similarity with the portrayal of Satan as a kind of martyr in our project, we did reference the book and its author in our audio puzzle. In addition, the main page of the Weavers features nine philosophies, or ways to live your life, that is an adapted version of a list found in LaVey's book.

Personal Effects: The Dark Arts (Hutchins and Weisman, 2009): Personal Effects: The Dark Arts is a game which is the near perfect hybrid of Persistent ARG and adventure novel. At its base it is an adventure novel, however it comes with a number of pieces of paper in various forms which provide the player with tangible clues for the story. As the player reads through the book the main character discovers these clues in the story, so the player can physically examine these clues as well. Additionally, there are a few phone numbers mentioned throughout the story,

all of which are actual numbers which, when called, are answered by characters from the story. The tree-matrix puzzle was partially inspired by these phone-number puzzles, which task the player with figuring out the voice-mail boxes' password. From the tree-matrix puzzle the player learns of a phone number which they can then actually call with their own phones.

CD-Based ARGs

Missing Since January (*Missing: Since January, 2003*): *Missing Since January*, or “Missing” is a persistent alternate reality game available through a purchasable CD. This CD contains the main portion of the game, which is a series of puzzles, videos, and story elements. In order to complete the puzzles, online research is often required, which is a major factor of the puzzles in Planet Dearth. Our Floating Orbs puzzle is inspired by the gateways in “Missing”; all the puzzles in “Missing” are reachable through a specific orb that randomly moves about the screen; however, the orbs in “Missing” serve no other purpose, whereas we make the orbs the actual puzzle. “Missing” also sends emails to the player as the game progresses, giving the player information about the characters and storyline, which is a concept that we wanted for our game.

Evidence: The Last Ritual (*Evidence: The Last Ritual, 2006*): *Evidence: The Last Ritual* is a flash-based persistent ARG, and the sequel to *Missing: The 13th Victim*. *Evidence* presents the player with a packet of evidence and a CD-ROM and puts them in the seat of a detective remotely assisting a number of other officers trying to catch a killer all over the globe. The CD-ROM is a clue left by the killer, and presents the player with puzzles that are as eerie as they are challenging. A number of ideas sprung from playing *Evidence*, including the styles of puzzles and the method of rewarding the player with puzzles after they've completed puzzles. After the

player completes a certain puzzle(s) they are given a new movie which both explains more of the story as well as provides more motivation for the player to complete the game and finish the story. In Planet Dearth the same type of structure of puzzles and movies is used, the player is rewarded with a movie which explains more of the story after almost every puzzle they complete.

Websites

How To Make a Login System for Your Website (Riso, 2007): This online article by Marcos Riso in 2007 gave us an introductory explanation on how to create a PHP-based login system on a server enabled for MySQL and PHP. This article has code samples and written explanation on the code samples for the easy implementation of such a system.

Short Message Service / SMS Tutorial (Developer's Home, n.d.): This online article by HarmoniousTech Limited was researched for the purposes of including potential cell phone texting functionality in our game. We did not include any Short Message Service/texting in our final project, since having a cell phone that automatically texted players was not practical within the scope of the project due to our budget and the need for constant connection of the cell phone to the internet.

jqPuzzle (Stoltze, n.d.): The jqPuzzle API was useful in implementing a sliding tile puzzle for our final puzzle. This puzzle was a feature we required for the final puzzle, and the jqPuzzle API allowed for quick and simple implementation of our own sliding tile puzzles with slight modification to the source code for our own purposes.

Recycling Symbols on Plastics (Howard, n.d.): This online article by Brian Clark Howard in 2008 served as an inspiration for one of our planned puzzles that we removed from our design. This website gave examples of plastics, including their recycling number. Our puzzle concept was a quiz to get players to research the recycling numbers of different types of plastic. We later removed this puzzle from our design, since we did not want multiple quiz-like puzzles.

Google Earth (Google Earth API, 2010): This online API for Google Earth was very useful for implementing a Google Earth puzzle in our game. This site had a well-documented API, describing how each method and variable was to be used, and the site also had a collection of example scripts that allowed for code to be demonstrated to the viewer. Using this API, our final puzzle was realized.

w3schools.com (w3schools.com, 2010): This website, by the Refsnes Data company, is a website devoted to displaying the basics of web development, including HTML, JavaScript, and PHP, all of which we used in Planet Dearth. This site was useful for learning the above languages and implementing them into a complex product, such as our websites.

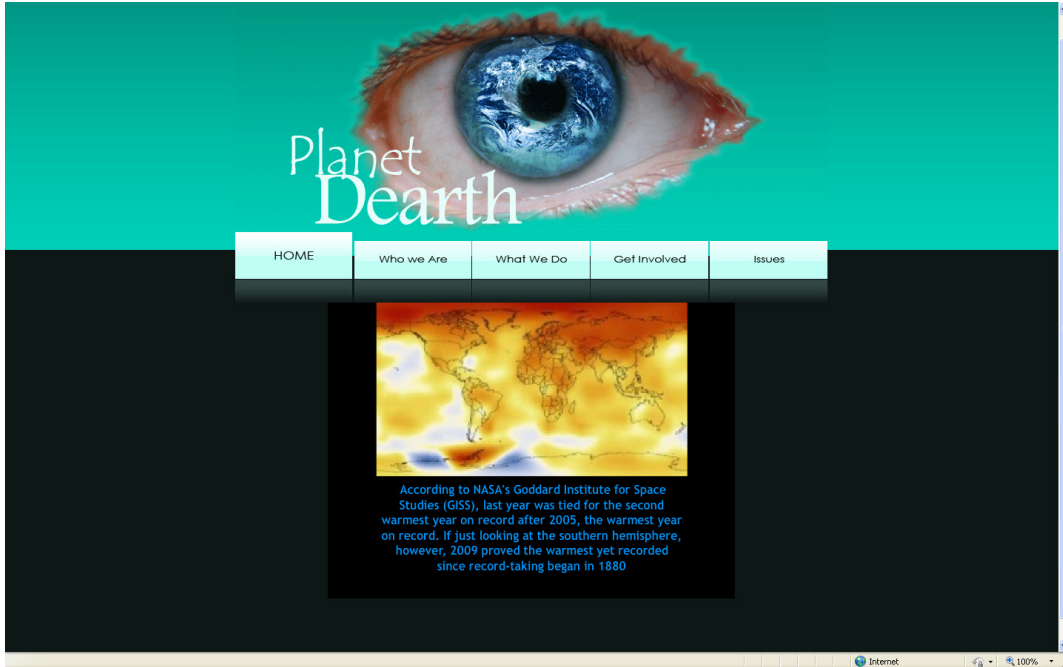
GreenPeace.org (Greenpeace.org, n.d.): The Greenpeace website served as some early inspiration and guidance for the Planet Dearth website. As the Planet Dearth website was meant to look like an environmentalist group from the outside, we sought to emulate a number of features from other environmentalist group's site, including GreenPeace.org. From GreenPeace.org we took the idea for the Flash box with pictures of relevant news stories, which serve to show the player that the group is watching and aware of global environmental news.

Panda.org (*Panda.org, n.d.*): Panda.org is the website of the World Wildlife Foundation, another large environmental group from whom ideas for the Planet Dearth website were culled. Specifically the layout of the website was one that adapted for the Planet Dearth site. Panda.org designates a large portion at the top of the site to both display its logo and make the site as a whole more visually appealing.

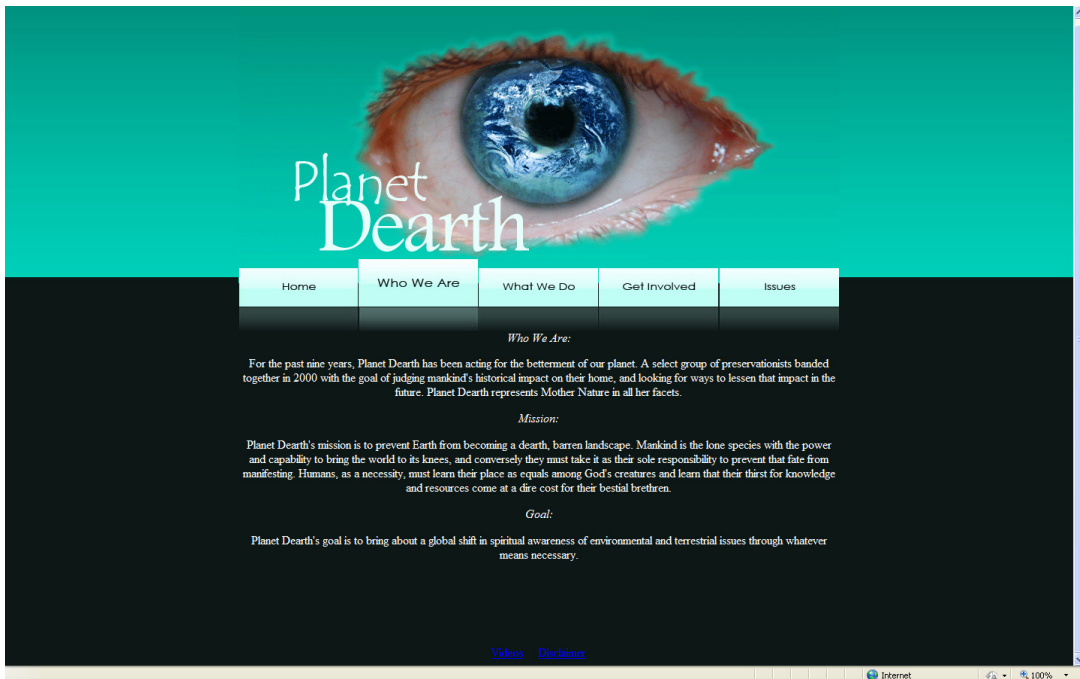
Free Website Templates (*Free Website Templates, 2010*): With almost no prior experience in web-design before this project, a jumping off point for the web-sites was needed. Both the Planet Dearth and Weavers sites started off as templates from freewebsitetemplates.com, but were repurposed and designed to suit the needs and styles of the game. Though aesthetically much was changed, the base HTML upon which the websites are built was used as a starting point and guide for the creation of both websites.

Environmental Quotes (*The Quote Garden, 2010*): Initially, the first iteration of our game involved a heavier use of environmental quotes. Many of them were obtained from this website, although its only use in the current version of our game is the quote in the Quote Cipher puzzle.

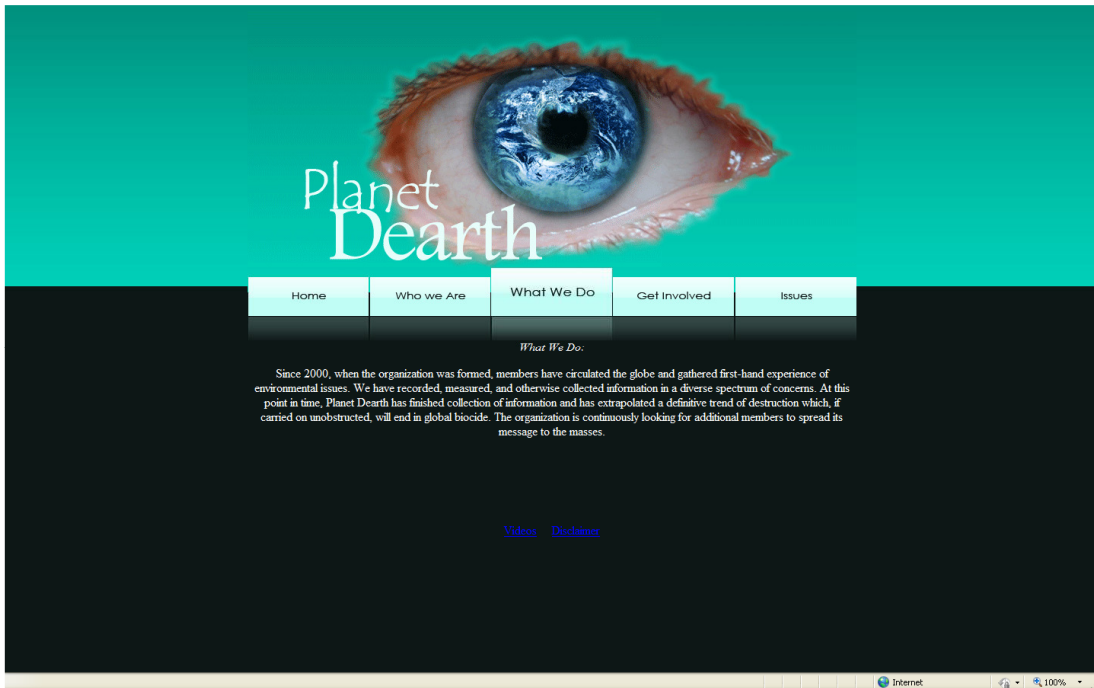
Appendix II: Non-Puzzle Website Images



Planet Dearth Home



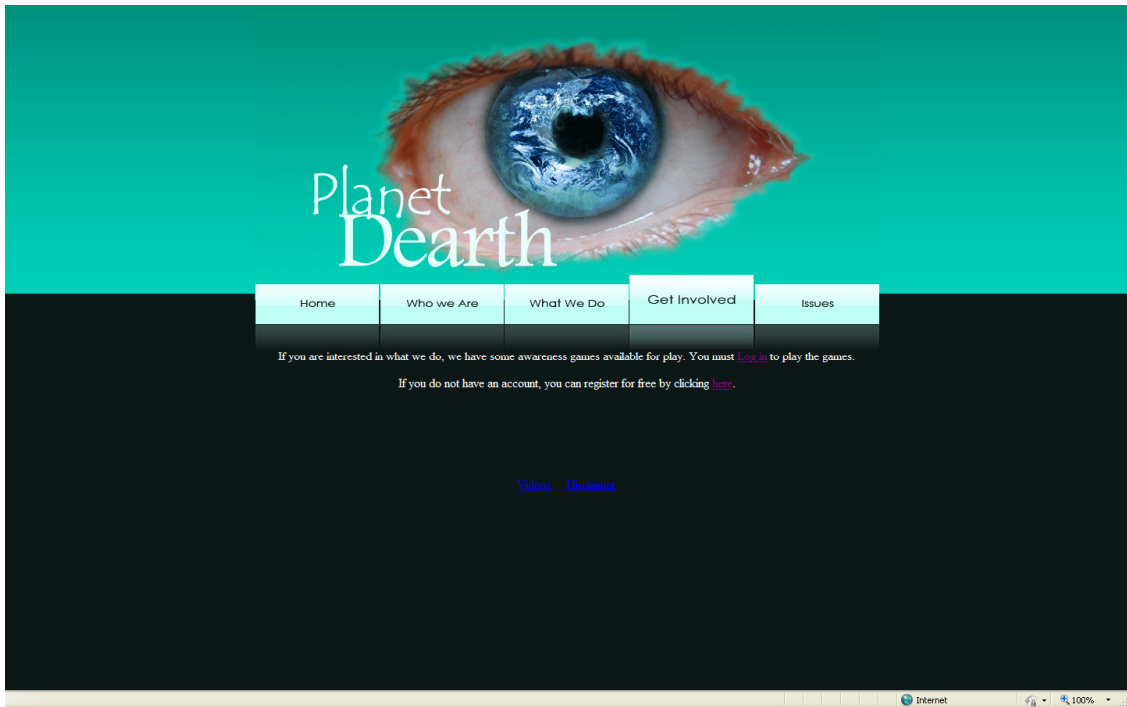
Planet Dearth Who We Are



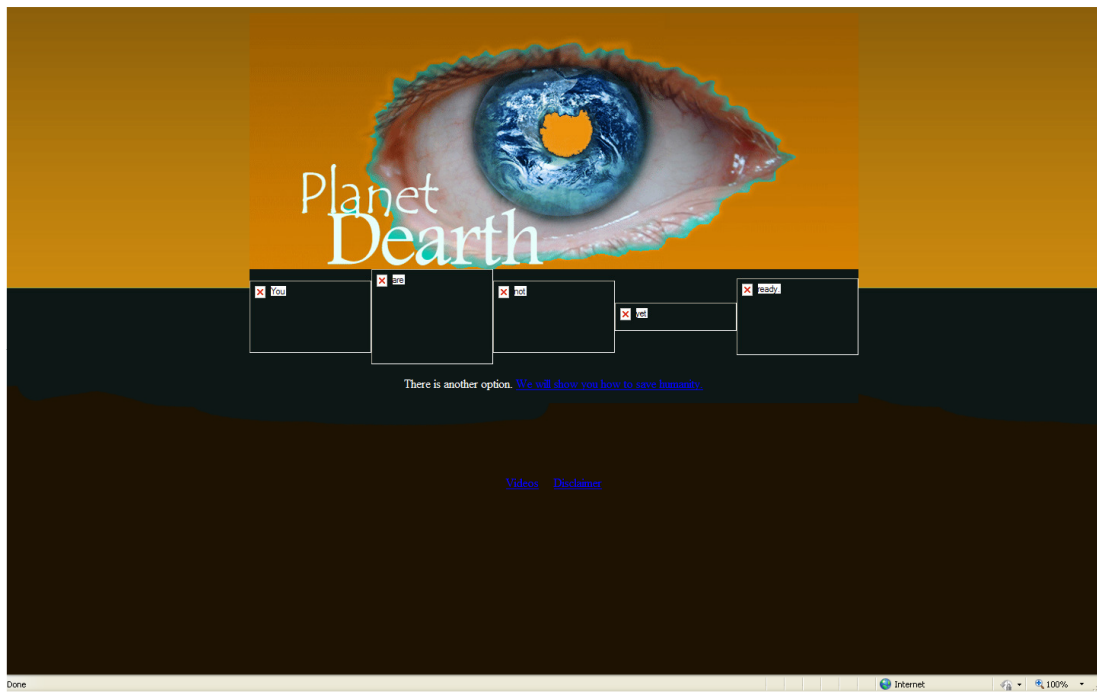
Planet Dearth What We Do



Planet Dearth Issues



Planet Dearth Login



Hacked Planet Dearth



WEAVERS OF THE CANVAS

Home

Consciousness

To all those seeking truth, welcome. Here you will find only kindness and compassion as dictated by independent thinking. If you come with your hands in a holy book, your mind may not survive the rehabilitation.

We are the Weavers of the Canvas. We show life as it is:

Continuous.
Beautiful.
Flowing.

The following principles outline our philosophical code and embody our way of life.

We represent indulgence instead of abstinence
We represent vital existence instead of spiritual pipe dreams
We represent undefiled wisdom instead of hypocritical self-deceit
We represent kindness to those who deserve it instead of love wasted on ingrates
We represent vengeance instead of turning the other cheek
We represent responsibility to the responsible instead of concern for psychic vampires
We represent man as just another animal, sometimes better, more often worse than those that walk on all-fours, who, because of his "divine spiritual and intellectual development," has become the most vicious animal of all
We represent all of the so-called sins, as they all lead to physical, mental, or emotional gratification

I call'd him, and he came, And with wonder his form did I closely scan, He is not ugly, and is not lame, But really a handsome and charming man. A man in the prime of life is he, Obliging, a man of the world, and civil, A diplomatist too, well skill'd in debate, He talks quite glibly of church and state. Heinrich Heine

It is him, The son of mystery, And since God suffers him to be, He, too, is God's minister, And labors for some good By us not understood. Henry Wadsworth Longfellow

The devil is an optimist if he thinks he can make people worse than they are. Karl Kraus

There is only one cause of unhappiness: the false beliefs you have in your head, beliefs so widespread, so commonly held, that it never occurs to you to question them. Anthony de Mello

Weavers of the Canvas Home

Appendix III: URLs of Important Websites

Planet Dearth

Home: <http://planetdearth.org>

Login: <http://planetdearth.org/involved.php>

Quote Cipher: <http://planetdearth.org/quotegame.php>

Tree Matrix: <http://planetdearth.org/livetrees.php>

Bible Verse: <http://planetdearth.org/thebook/bible.php>

Danger of Need: <http://planetdearth.org/thebook/dangerofneed.php>

Apocalypse: <http://planetdearth.org/thebook/a1.php>

<http://planetdearth.org/thebook/a2.php>

<http://planetdearth.org/thebook/a3.php>

<http://planetdearth.org/thebook/a4.php>

Google Earth: <http://planetdearth.org/fate/earth.php>

Final: <http://planetdearth.org/fate/final>

Weavers of the Canvas

Home: <http://weaversofthecanvas.org>

Login: <http://weaversofthecanvas.org/triangle000.php>

Triangle Gateway: <http://weaversofthecanvas.org/triangle000.php>

Reversed Audio: <http://weaversofthecanvas.org/audio.php>

Ages of Man: <http://weaversofthecanvas.org/agesofman.php>

Orbs: <http://weaversofthecanvas.org/orb1.php>

<http://weaversofthecanvas.org/orb2.php>

<http://weaversofthecanvas.org/orb3.php>

Appendix IV: Puzzle Flowchart

