

Analysing Alternate Reality Games based on game design theory to propose a conceptual framework

By

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Submitted in fulfilment of the requirements of the degree

MIS (Multimedia)


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Supervisor: TJD Bothma

Date of submission: August 2015

Declaration

I declare that the Master's dissertation, which I hereby submit for the degree MIS (Multimedia) at the University of Pretoria, is my own work and has not been previously submitted by me for a degree at another university.



Koos (JW) de Beer

31/08/2015

Date

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Abstract

The aim of this research is to develop a conceptual framework for alternate reality games based on game design theory. Alternate reality games or ARGs are a unique form of game that enables people to collaboratively play a game that is not a game in the context of the real world. To understand ARGs one needs to understand what differentiates them from other types of games as well as what makes them games. The research investigates existing literature of alternate reality games as well literature in the field of game studies to develop a set of characteristics for alternate reality games based on game design theory. Case studies are done on three different ARGs and summaries for the games are created. The phenomena in the summaries are placed into categories and subcategories. The categories and subcategories are developed by analysing the game summaries using constant comparative analysis. Using the categories, subcategories and the relationship between them, diagrams are created for each of the studied ARGs. A detailed analysis of each game is done and a summary diagram is created for each game. The summary diagrams are then combined to create a generalizable diagram for ARGs. The combination of the theoretical framework developed during the literature study together with the generalizable diagram from the analysis of the three games are then combined to create a conceptual framework. The conceptual framework creates a deeper understanding of ARGs and the various phenomena found within them by building on game design theory found in the field of game studies. The conceptual framework can aid in the creation of ARGs as well as enable the further analysis of these games.

Keywords

Game studies, game design theory, alternate reality games, case studies, conceptual framework, theoretical framework, narrative, game actions, community, collaborative play, comparative analysis

Acknowledgement

I would like to express my sincerest thanks to my family, especially my wife - Linda de Beer, for their support and encouragement. Thank you to my own personal librarians, Lourina de Beer (my mother) and Erica van der Westhuizen for helping me search through all the content and for proof reading my work. To the professors in the Department of Information Science at the University of Pretoria, thank you for helping me think through this and for keeping it all in perspective (Prof. Ina Fourie, Prof. Fanie de Beer and Prof. Theo Bothma). The same goes to the almost professors, Dr. Marlene Holmner and Dr. Cecilia Penzhorn.

Finally, I would like to thank my friend and mentor, Nelis Franken. It is thanks to you that I was able to embark on this journey and learn the things I did. If it wasn't for our "what about alternate reality games" discussion, I would not be where I am today.



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1 Chapter 1 - Introduction

1.1 Introduction

Alternate Reality Gaming (also known as ARGs) is a genre of gaming that is slowly moving from an uncommon genre to a well-known and widely used form of gaming. The nature of ARGs is so rapidly changing that it is very difficult to give a single definition as it will limit the understanding of the individual games. Various definitions for an ARG are provided below:

Alternate Reality Games (ARGs) tell stories through narrative elements that are distributed across various platforms. These game variables are carefully concealed from players until appropriate moments determined by the game designer(s). Game play involves players working collaboratively through email, phone/sms contact, real-time interactions and extensive online engagement. Players generally react to narrative cues that are projected across numerous forms of media. These include media technologies that are not traditionally associated with games that, unlike ARGs, rely on a single platform for communication (eg console games). In doing so, ARGs make players step outside the restrictions of mono-genre game boundaries.

Instead of requiring the player to enter a fictional game world, ARG designers attempt to enmesh the game within the fabric of the player's real world by harnessing as many media technologies and interfaces as possible. By doing so, ARGs expand the frame for the game beyond the computer monitor or television screen, effectively making the entire world the "game board."

(Bono & Breeze 2008)

Another definition is provided by Unfiction Inc (2002) as:

A cross-media genre of interactive fiction using multiple delivery and communications media, including television, radio, newspapers, Internet, email, SMS, telephone, voicemail, and postal service. Gaming is typically comprised of a secret group of Puppet Masters who author, manipulate, and otherwise control the storyline, related scenarios, and puzzles and a public group of players, the collective detective that attempts to solve the puzzles and thereby win the furtherance of the story.

(unfiction inc 2002)

The IGDA ARG SIG (International Game Developers ARG Special Interest Group) gave this definition in their 2006 white paper (Martin et al. 2006):

Alternate Reality Games take the substance of everyday life and weave it into narratives that layer additional meaning, depth, and interaction upon the real world. The contents of these narratives constantly intersect with actuality, but play fast and loose with fact, sometimes departing entirely from the actual or grossly warping it - yet remain inescapably interwoven. Twenty-four hours a day, seven days a week, everyone in the country can access these narratives through every available medium – at home, in the office, on the phones; in words, in images, in sound.

(Martin et al. 2006:6)

The work on the whitepaper continued on a wiki website (IGDA Wiki 2011).

There are other definitions as well that further cement the original statement that the definition of ARGs is constantly changing and requires the author or researcher to settle on what he/she accepts as the definition for the study (Gosney 2005; Kim, Allen & Lee 2008; McGonigal 2011).

All the previous mentioned definitions have the following common elements:

- An ARG is a game: First and foremost, an ARG is a game that can be played and enjoyed by players.
- Players collaboratively solve problems. This involves the players collectively interpreting certain information and interacting with that information and one another. The interaction between the players can be through various technologies.
- An ARG contains a narrative: The narrative is provided to the player in the form of chunks of information where some of the chunks are hidden. The information, which forms the story as the players unravel it, must be discovered, gathered and interpreted for the story to be more understandable and for the game to advance.
- An ARG makes use of multiple media: ARGs make use of multiple types of media to provide the above-mentioned information to the players and also to facilitate the play of the game. These include multimedia (digital) and non-digital media.
- An ARG creates alternate realities: The creation of an alternate reality is an intricate part of ARGs. This enables the player, without much effort, to feel like he/she is part of the game. This is achieved in ARGs without creating virtual worlds within a computer but by adding onto the existing reality and in such a way, create its own reality. Reality is used in ARGs as the primary resource for gameplay (Waern, Montola & Stenros 2009)

A more in-depth investigation surrounding the definition of ARGs as well as their important components will be done in the literature review chapter (Chapter 2). The above-mentioned definitions serve as a preliminary and cursory description of what ARGs are. They will be included in the discussion of the various definitions of ARGs.

ARGs started as marketing tools but have evolved beyond that initial purpose. The first well known ARG was called The Beast and was created for the movie AI by Stephan Spielberg. The game was played before the release of the movie and served to expand and popularize the fictional world in which the movie took place. The production company, Warner Brothers, commissioned the company 42 Entertainment to create the game. This ARG took the story world created for the movie AI and created a “murder mystery game”.

To understand ARGs more one also needs to understand the philosophy surrounding the ARG genre. According to Szulborski (2005:1) this is one of the main goals of an ARG: The philosophy is “This is not a game”:

*In fact, one of the main goals of an ARG is to deny and disguise the fact that it is even a game at all. This is what the community of immersive gaming fans and creators embrace as the main principle of Alternate Reality Gaming and what has come to be called the TINAG philosophy, or **This Is Not A Game**.*
(Szulborski 2005:1)

Players need to think that what they are looking at is not a game but some version of reality. The ability of players to accept the fictional world of the game as reality is something that is not unique to ARGs and can be found in any game. Bernard Suits introduced the concept of the lusory attitude in 1978 (1990). The lusory attitude is the ability of the player to have a shared acceptance of the inefficiency of the rules that are required to play games. This attitude can be seen as a component of the TINAG philosophy.

It is also important to mention that even though the literature refer to “This is not a game” as TINAG, Jane McGonigal, a prolific ARG scholar, refers to it as TING. In the literature review chapter (Chapter 2) the researcher will discuss her relevant work in detail but for now it is important to know that the concept of TINAG and TING is the same thing and is referred to further as TINAG.

Because of the mantra, 42 Entertainment could not advertise *The Beast* but were still required to get players interested in the game. To achieve the necessary interest without advertising, the puppet masters used the principle of a rabbit hole. They provided players with an interesting piece of information which they could follow further (Szulborski 2005). It is also important to state that at this stage the players were not aware that they were players.

As the players followed the information they gained access to a larger universe on the internet. Puzzles blocked the players' access to more information and so a group, calling themselves *The Cloudmakers*, were created to solve the puzzles. The group solved problems as a collective and in that way, moved the narrative forward.

After *The Beast* many other ARGs came onto the scene. Some of them were for marketing purposes like *The Beast* but community created ARGs also evolved. An example of independent ARGs are *Change Agents: Creative Chip* which was played in 2001 and created by David Szulborski.

The game development company EA (Electronic Arts) attempted to capitalize using the new evolved genre of ARG by creating an ARG called *Majestic*. *Majestic* was not a success and EA had to shut down the play of the game (Walker 2001).

More ARGs were created, some for pure entertainment like *Chasing the Wish* (2003, created by David Szulborski), some created for marketing purposes such as *I Love Bees* (2004, created by 42 Entertainment for the launch of the Microsoft game *Halo*), *Year Zero* (2007, created by 42 Entertainment) and *The Art of the Heist* (2005, created by McKinny Silver) to mention a few. Educational ARGs such as *Urgent Evoke* created by the World Bank Institute (World Bank Institute 2010) and *World Without Oil*, designed by Ken Eklund (Eklund 2007) are used to teach the players about specific events. *Metacortex* (Anon 2003c) is an example of an ARG created by fans (specifically fans of *The Matrix* movies). The game was run in 2003 and was integrated, by the fans, into *The Matrix* universe. There are more types of ARGs that will be discussed in detail in Chapter 2.

1.2 Background to the problem

There are various elements to consider when analysing ARGs and where they fit into the literature. Montala (2005) considers ARGs to form part of pervasive games. Hinske argues that ARGs should not be confused with pervasive games (Hinske et al. 2007). Montala claims that ARGs can be called immersive games (Montala 2005). ARGs make use of various technologies (Montala 2005; Kim, Allen & Lee 2008; Hansen et al. 2013) and require players to collaborate to facilitate the play of the game (Gurzick et al. 2011; Bonsignore et al. 2012). The player is responsible for pushing the narrative of the game forward by participating in the game and creating his own narrative (Dena 2008).

Studies about ARGs and pervasive games are mostly case studies (Harris et al. 2004; Bichard & Waern 2008; Jonsson & Waern 2008; Stenros et al. 2011) and attempt to analyse played games based on the specific focus of the study. Focuses can range from education (Connolly et al. 2008; Bonsignore et al. 2012), immersion (McGonigal 2003a; McGonigal 2003b; McGonigal 2007a), interaction (Harris et al. 2004; Connolly et al. 2008), collaboration (Gurzick et al. 2011), narrative (Gurzick et al. 2011; Stenros et al. 2011) and using the concept of a game master to manipulate the players (McGonigal 2007a; Jonsson & Waern 2008).

With the primary focus of this study coming from a game design perspective, the researcher has found few examples of ARGs being analysed from a game design perspective. Examples of analysis of pervasive games from a game design perspective can be found, an example of which is Walther's three key units of pervasive games (2005a; 2005b) which relies on Juul's (2003) work about game rules and Lundgren and Björk's (2003) definition of game mechanics.

1.3 Statement of the problem

The researcher has found that analysis of ARGs based on established game design theory is not widely found. This can be due to various reasons such as the fact that ARGs are primarily documented by the players (in written game guides, catch-up documents or wikis), that the game organisers and puppet masters do not make the game planning and design documentation readily available and that the game content (game sites, live events, game artefacts) are not preserved for a very long time.

The researcher will attempt case studies of already played ARGs by investigating the existing game guides and game content that can still be found, compiling an extensive narrative of the games and categorizing the events and elements of the game narratives into categories based on established game design theory. The analysis of the case study summaries containing the categorizations will then provide the researcher with abstract constructs based on game design theory. These constructs will then in turn provide a better understanding of ARGs from a game design perspective.

1.4 Purpose of the study

By taking a qualitative approach, the study will attempt to categorize the events and elements within the ARG narratives into the abstract constructs mentioned above. The selection of the ARGs for the case studies will be based on the completeness of the player accounts (detailed game guides), availability of game content (game sites, accounts both digital and second hand of live events, player participation on game forums etc.) and the relative success of the games. The inclusion of an ARG run by the researcher will show that the constructs are evident even in less complex games.

The study will not attempt to redefine what ARGs are. The focus will be mainly on how the ARG works and how the players interact with the phenomenon. The study will also not attempt to criticize the way certain ARGs functioned and were ran by the puppet masters and will rather focus on the ARG as an entity (the combination of the puppet masters and the ARG puzzles/story). The study will not attempt to discuss technology in-depth and will assume a certain level of understanding of technologies used in ARGs. By compiling the narrative summaries from the large amount of game related content (guides, game content, player accounts etc.) the flow of the game is established. The narrative will also be divided into the weeks during which the game took place, to establish when specific events happened. The researcher will then apply a second level of analysis on the narrative summaries to categorise the game events. The categories and their subcategories will also develop from the first and second level analysis of the game summaries. The game specific analysis of each case as well as a combined analysis will be done to help clarify the existence of the abstract constructs.

From the abstract construct for each game, the combination of these structures would then lead to the definition of a conceptual framework that will enable an understanding of ARGs and how they work as well as provide a tool for analysing ARGs based on existing game design theory.

The purpose of the study is to define a conceptual framework based on existing game design theory. The framework (“a structure made of parts joined to form a frame; esp. one designed to enclose or support; a frame or skeleton” (Oxford Dictionary 2014c)) can be used as a basis for constructing future ARGs, will consist of components (“composing, constituting, making up, constituent” (Oxford Dictionary 2014b)) defined in the ARGs that will be placed in categories and subcategories (“given to certain general classes of terms, things, or notions” (Oxford Dictionary 2014a)) that are based on existing game design theory.

1.5 Significance of the study

Analysing ARGs based on established game design theory will enable researchers and game designers to easily understand how ARGs function and how the various complex events during the game interact with one another. By basing the categorization on established game design theory, the study will provide an in-depth understanding of how ARGs function as games while still taking into consideration their complexity with regards to trans-media, collaboration, narrative and complex player interaction.

1.6 Primary research questions and sub-questions

To achieve the purpose of the study, the following primary question has to be answered. The sub-questions divide the primary questions into separate goals. Each sub-question will be answered from different sources (see Table 1).

1.6.1 Primary research question

How can a conceptual framework for ARGs, based on game design theory, be developed?

1.6.2 Sub-questions

Question	Description	Source
How can the components/categories of an ARG be identified?	The ARG summaries will be divided into components based on their primary focus. Everything in an ARG is linked but these component definitions will attempt to define a boundary between these occurrences.	Literature
What components/categories were identified?	The categories will be based on established game design theory and will enable the researcher to group the components found within the ARGs.	Literature
How are the components/categories of an ARG sub categorized?	For a component to be placed in a category, it will have to adhere to certain characteristics. The explanation of the categories will contain these requirements.	Literature and Empirical
What structures are formed by linking according to the relationships between the components/categories and subcategories?	By placing components in specific categories they will have certain interactions with components in different categories. These interactions will be explained in detail when the categories are defined. Based on these interactions, the components will be linked together. The linking will result in a simple structure that can be identified in the case studies.	Empirical

How can these structures be used to develop a conceptual framework?	The structures will occur in certain order, at specific frequencies and at regularities that will enable the researcher to develop a design framework that can aid in future research and development of ARGs.	Empirical
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Table 1: Research sub-questions.

1.7 Research design

Due to the nature of the information available for ARGs certain research methodologies need to be followed to do a successful study. It is important to mention that most information available for ARGs is generated by the community who played or is actively playing the games.

Information related to ARGs is usually in the form of forum posts and threads that consist of players' opinions and attempts at solving puzzles. The websites related to the games contain most of the information and are continuously changing throughout the play of the game. There is no formal archiving process in place for ARGs so the game guides for games that have already been played would have been compiled by players. These game guides can also serve the purpose of a "catch up" document for new players during the run of the game. This information will be secondary information and will be used in this study as it is more organized and relevant than the primary information. The primary information will consist of the forum posts, email list, emails and websites used in the ARGs during play. Where secondary information is not available for a certain game, the primary source will be used. Both secondary and primary information sources will be collated to form the game summaries. The researcher will be able to establish timelines and fill in gaps by combining both information sources. More details on the specific methods will be discussed in Chapter 3.

During this study, the following methods will be used:

- Literature study
- Case study

1.7.1 Literature study

According to Struwig and Stead (2001:38 – 39) a literature study involves a study and analysis of documents containing information relevant to the research problem. The literature study helps to provide background information regarding ARGs from which certain concepts can be derived. The literature study will also show the primary theory in the field and will enable the researcher to establish context for this study.

The literature review starts by analyzing existing research in the subject field of game studies. Characteristics of games are identified and discussed to provide understanding and background to what games are and what game design focuses on. Certain components are then researched and analyzed in more depth.

The literature review then focuses on ARGs and what research has been done about the gaming phenomenon. The study again collects definitions of ARGs to build a collection of characteristics important to ARG. These certain characteristics are then discussed in detail to provide better understanding of the phenomenon.

The literature review concludes by collecting the analysis of game design theory as well as the existing theory of ARGs and compiling a general table explaining the components of an ARG. The nature of ARG, as the section is called, provides the theory that guided the analysis of the game

summaries. Salient issues are identified in the literature study that provide context for analysis in Chapter 5.

By analyzing the literature available, the researcher will establish context for his approach to the analysis. The literature will provide motivation for the definition of the ARG components, the categories and subcategories of analysis for the game summaries as well as how these categories and subcategories can be applied to the various phenomena. The literature review also analyses the game design theory relevant to this approach of analysing ARGs.

1.7.2 Case studies

Case studies as defined by Yin (2013) are used to study individuals, a group, or organizational, political and related phenomenon. The primary focus of case studies is on contemporary events. These events are ideally observed as they happen in real time. The use of case studies can enable the researcher to understand complex social phenomenon.

With ARGs and specifically those selected for this study, the researcher could not observe the events in real time. The sources used to conduct the study are primarily from player accounts, game guides, player interactions (on web forums, email chains, second hand player accounts, etc.) and game sites (if they were still active). Parallels will be drawn between the data gathered for the ARGs and the data required for traditional case studies in Chapter 3.

The cases selected will be three ARGs that have been played in the past. The motivation for their selection, description of compiling the summaries, data sources and analysis will be discussed in detail in Chapter 3. Multiple cases were selected for the purpose of cross-case comparison for more effective generalization.

1.8 Overview of the literature

The literature focuses on three components; defining games and discussing game design theory, defining alternate reality games and the theory that informs their design and discussing identified components of alternate reality games using the defined theory.

1.8.1 Defining games

An understanding of games will be established from existing academic work (Juul 2003; Lindley 2003; Salen & Zimmerman 2003; Eyles & Eglin 2007; Hinske et al. 2007). Through the analysis, specific components of games will be identified for further study. These include mechanics (Salen & Zimmerman 2003; Schell 2008), goals (Järvinen 2008; Schell 2008), rewards (Hallford & Hallford 2001; Salen & Zimmerman 2003) and narrative (Juul 1999; Juul 2001; Salen & Zimmerman 2003; Lee, Park & Jin 2006). Each component will be discussed in detail based on existing work and theory.

1.8.2 Defining Alternate Reality Games

As with games, an understanding of ARGs will be developed as well as investigating the characteristics based on existing academic work (McGonigal 2003b; McGonigal 2004; Dena 2008; Kim, Allen & Lee 2008; Gurzick et al. 2011). Characteristics of ARGs will be identified and discussed for further clarification. These characteristics include collective intelligence (Lévy 1999; McGonigal 2003b; Jenkins 2006), pervasiveness (McGonigal 2004), cross media and multiple media requirement (McGonigal 2003b; McGonigal 2004; Kim, Allen & Lee 2008; Gurzick et al. 2011), the concept of "This is not a game" (McGonigal 2003b; Kim, Allen & Lee 2008) and other characteristics.

A detailed table of the characteristics of an ARG can be found in Chapter 2 (see Table 4).

A classification of ARGs will also be provided based on types of ARGs (Martin et al. 2006). Interesting characteristics that influence the design of an ARG are also discussed briefly. This includes the concept of puppet masters, “the power play”, the concept of “the rabbit hole” and virtual immersion.

1.8.3 The nature of an ARG and the three components

The final section of the literature study will be dedicated to combining the theory discussed earlier during the literature review and identifying three components. These components are:

- Collaboration – the player community
- Narrative – Interactive narrative and the player as producer
- Game actions of alternate reality games.

These three components are what comprises an ARG. Each of these categories existence were informed by the literature. The categories are described in detail using a combination of ARG theory and game design theory. An understanding of the three components is important to confirm the existence of the categories and subcategories identified in Chapter 3.

1.9 Assumptions, limitations and scope

1.9.1 Assumptions made during this study

Even though the literature will cover what this study considers to be a game as well as define ARGs as a game, the assumption will be that ARGs as games adhere to the same definition and requirements of what it is to be a game.

ARGs, like games, are played by players. The study will not focus on the type of players one has in play. The assumption will be that games have players and that they cannot exist without them (games must be played).

The reasoning behind picking the specific three games for the case studies will be explained in detail in Chapter 3. An assumption was made that these games were considered to be successful. They were played and completed by the players. The experience was considered to be successful and complete.

1.9.2 Limitations of the study

As previously mentioned, the study focused on three specific ARGs. The data collected for these ARGs are primarily player accounts. These are second-hand accounts of game events, solving of puzzles and player experience during the game. The game specifics are reproduced in the game summaries from player accounts and interaction, not from the perspective of the game designers. The game designer may have planned the events or specific interaction in a certain way but how the players experienced it and completed the event may differ from that.

The specific game-created content like game sites, videos, game artefacts as well as live events were not necessarily available during the study of each game. The games were selected based on the quality of the guides available as well as the number of game artefacts available to the researcher.

The researcher was not able to access design documents for the selected games. The closest to game post mortem documentation was reports from players in the form of game guides or from the designers in the form of press releases. No official design documentation was acquired.

1.9.3 Scope

The study will only focus on three games. They were selected based on the quality and amount of data available. The detail of the guide was also taken into consideration as well as the running time of the game. The longer the game ran the more data it accumulated. The detailed motivation for selection will be provided in Chapter 3 of this study.

The approach of this study was to compile the game summaries from the available game data, identify the components within these game summaries, categorize the components, establish links between the components and finally compile a framework based on these structures formed by the components. This process will be based on established theory for both ARGs as well as game design. The study will be repeatable by any researcher following the process laid out in Chapter 3.

The end result of the study will be the proposed design framework. The framework can be applied in the design of any ARG as well as the analysis of already played games. The framework can and must be expanded upon. The more detail available about a game, the more components can be identified. This will enable future work to expand the existing framework. Extending the game design theory to other aspects of game design will also allow future research to expand on the categories of this study. This will enable researchers to identify more links between the components which will enable future work to expand on the existing framework.

1.10 Summary

Chapter 1 provided an overview of what the study will consist of, the approach taken by the researcher as well as an explanation of the purpose and goals of the study. Chapter 2 contains the literature study and provides the theoretical framework and context for the rest of the study.

2 Chapter 2 – Literature review

2.1 Introduction

Chapter 1 provided an introduction to the study, explaining the approach to the literature review briefly as well as summarizing the methodology. Details were provided on the empirical study and the approach thereof. In this chapter, the existing literature will be discussed to help create a theoretical framework and identify the salient issues in the existing research.

The chapter starts by identifying characteristics of games from the various perspectives in game studies. Some of the components are discussed in more detail to provide more insight into what these components are, again from the different perspectives in game studies. The review then continues on ARGs. Characteristics are identified for ARGs as well as background provided for what ARGs are and where they come from. An attempt is made to position ARGs with other game genres that will enable a better understanding of what ARGs are and are not.

Finally the nature of ARGs is established and discussed from the literature. The three identified components served as the basis for the analysis of the game summaries and are considered the salient issues (the base theory for ARGs). A table is provided to explain how the detailed characteristics identified in the game design theory fit into the characteristics identified from the existing ARG literature.

2.2 Defining games

To establish what the study considers to be game design theory, an investigation of the existing literature is required. The investigation will primarily focus on what a game (not just digital games) is as well as the components and requirements of a game. An understanding of games is also required to further understand ARGs and what makes them games.

2.2.1 Defining games

A working definition of what a game is should be established. The game historian, Davin Parlett wrote extensively on card games and board games. He distinguished between formal and informal games (Parlett 1999:1). Parlett's (1999:1) definitions for informal games are closer to a definition for "play" than games and are beyond the scope of this study. He defines formal games as consisting of a twofold structure: ends and means. Ends is the contest the players participate in to achieve an objective and the means is the equipment, procedures and "rules" the players agreed on to achieve the objectives.

The engineer and social scientist, Clark C. Abt, wrote:

Reduced to its formal essence, a game is an activity among two or more independent decision-makers seeking to achieve their objectives in some limiting context. A more conventional definition would say that a game is a context with rules among adversaries trying to win objectives.
(Abt 1970:6)

From Abt's definition we see that his focus is on decision-makers seeking to achieve objectives. The decision makers or adversaries as defined by Abt are the players. Abt also describes a "limiting context" in his definition; this is the rules and structure of the activities within the game.

Bernard Suits, a philosopher, define games and the act of playing as the following:

To play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favour of less efficient means, and where such rules are accepted just because they make possible such activity.

(Suits 1990:34)

In his definition, Suits explains that to play a game is to engage in an activity that results in a specific state of affairs. This activity is guided by specific rules that prohibit actions that may be more efficient ways of achieving the goals. These rules are also accepted because they make the activity possible.

The computer game designer, Chris Crawford lists four qualities that define games. These four qualities are from the first chapter of the book (Crawford 1984):

1. "Representation": The game is a formal closed system. A closed system is a self-sufficient structure. No outside agents or references are required to understand the game context. The formality of the system means that it is controlled by explicit rules.
2. "Interaction": Games enable the participants or players to generate cause and observe the effect. Games allow players to interact with them so the player can see what will happen.
3. "Conflict": Conflict can be found in games. It arises from the natural pursuit of a specific goal by the players. The achievement of the goal is hindered by obstacles.
4. "Safety": Conflict implies danger and danger implies risk. In games, the risk is not real. "Games create the psychological experience of conflict and danger while excluding their physical realizations" (Crawford 1984)

Greg Costikyan's essay, originally published online in 1994 (not accessible any more), republished in the compilation by Salen and Zimmerman (2006) proposes a definition for games:

A game is a form of art in which participants, termed players, make decisions in order to manage resources through game tokens in the pursuit of a goal.

(Costikyan 2006:196)

We can again see in Costikyan's definition of game that the component of player (or participant) is present as well as the requirement for this participant to make decisions. Costikyan's definition adds the requirement that the participant should manage resources by manipulating the game tokens. The pursuit of a goal is also present in his definition. Costikyan also describes games as a form of art.

Elliott Avedon and Brian Sutton-Smith provide this succinct definition of games:

Games are an exercise of voluntary control systems, in which there is a contest between powers, confined by rules in order to produce a disequilibrium outcome.

(Avedon & Sutton-Smith 1971)

Avedon and Sutton-Smith's definition focuses on the fact that players are voluntarily submitting themselves to the game system. Within this system players experience a contest and they are also, as in all the other definitions, guided by rules. They also mention a change in game states: from a balanced starting state to a different state.

Considering the above definition, Salen and Zimmerman compiled Table 2 below (note: their analysis of Johann Huizinga and Roger Caillois was omitted as their definitions focus more on play than on defining games).



Elements of a game definition	Parlett	Abt	Suits	Crawford	Costikyan	Avedon and Sutton-Smith
Proceeds according to rules that limit players	X	X	X	X		X
Conflict or contest	X			X		X
Goal-oriented/outcome-oriented	X	X	X		X	X
Activity, process, or event		X	X			X
Involves decision-making		X		X	X	
Artificial/Safe/Outside ordinary life				X		
Voluntary			X			X
Make-believe/Representational				X		
Inefficient			X			
System of parts/Resources and Tokens				X	X	
A form of art					X	

Table 2: Common elements in definitions of a game as compiled by Salen and Zimmerman and modified by the researcher (Salen & Zimmerman 2003:79).

From Table 2, Salen and Zimmerman compiled their definition for games:

*A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.
(Salen & Zimmerman 2003:80)*

Salen and Zimmerman (2003:80) define a game as an activity that is guided by rules where a certain outcome is expected. Salen and Zimmerman also extend this definition by calling a game a system where artificial conflict is created, within a certain set of rules with a quantifiable outcome.

The previous definitions of games were primarily selected by Salen and Zimmerman and provided a basis for their definition of a game. There were other game scholars that also attempted their own definition for games. It is worth including their definitions here to highlight similarities but also to show how the other scholars expand on these definitions and characteristics mentioned previously,

The definition of games according to Lindley (2004:2) is:

A game is a goal-directed and competitive activity conducted within a framework of agreed rules.

As with Salen and Zimmerman's definition, Lindley's (2004:2) definition is not limited to the medium the game uses. The above-mentioned definition is applicable to both computer games and traditional games.

Hinske et al. (2007:4) lifts four key elements from Salen and Zimmerman's definition:

- Activity with rules
- System
- Artificial conflict
- Quantifiable outcome

The above-mentioned elements mentioned by Hinske et al. (2007:4) agrees with Salen and Zimmerman's characteristics and discusses them as follows. Artificial conflict provides the risk element to the game. If the risk is big, the reward (value attached to the outcome) will be big as well and the inverse will be true as well. A game is also a collection of systems as defined by Salen and Zimmerman (2003:80).

Eyles and Eglin (2007:1) attempt a definition for computer games:

A video or computer game is an interactive entertainment played against, or with the aid of, computer generated characters or tokens in a computer generated environment.

Eyles and Eglin (2007:1) also further elaborate on this definition by explaining that the single player experience requires the player to overcome obstacles for reward where the multiplayer experience requires the player to overcome obstacles but at the expense of or with the help of other players. For the sake of this study, this definition of computer games will be used and expanded upon.

From the previous it is evident that a game requires goals, rules and conflict or obstacles for it to be seen as a game. Juul (2003:35) adds five more elements to the already established list:

- variable quantifiable outcome,
- value assigned to possible outcomes,
- player effort,
- the player should be attached to outcome, and
- negotiable consequence.

Juul (2003:35) expands on the requirement of a goal by saying that not only should the game contain a quantifiable outcome, but that every outcome should have some kind of value attached to it. Juul (2003:35) also relates the outcomes to the player by saying that the player should be attached to the outcomes. The outcome in the game should have meaning to the player and in that way provides an attachment between the player and the outcome.

Juul (2003:35) further expands on the player requirement of a game. Games require effort from players to show outcome. How much effort is required can be related to the value assigned to that specific outcome (risk and reward). The player is also attached to the outcome with regards to his/her emotion. A player will be "happy" if the outcome is positive and will be "unhappy" if the outcome is negative. Negotiable consequences mean that the game can be played with or without real life consequences.

Eyles and Eglin (2007:2) state that another not often mentioned characteristic of a game is where it is played. The location the game is played can be a computer at home, a game console, an arcade with friends, outside with other players or alone at a coffee shop. In many games, the location is not necessarily an influential factor but it is important to take into consideration for the sake of this study.

A game can also have both active participants (players) and passive participants (spectators or observers) (Hinske et al. 2007:7). In terms of Alternate Reality Games, the passive participant can also play the game by following the events and story as it unfolds. The moment the passive

participant provides information to the community such as an opinion or different perspective on a puzzle, the passive participant becomes active.

It is also important to mention that successful play, according to Lindley (2003), does not necessarily require the player to follow or know the rules exactly. The player only needs to know and follow the rules necessary for a specific play style.

Games also have different purposes for play:

*Games can be designed and played for different purposes, including, for example, entertainment, learning, or training.
(Hinske et al. 2007:3)*

The purpose or function of a game can also differ from the one game to the other. The fundamental difference according to Lindley (2003) between forms and functions of games are based on the narrative, repetitive game play and simulation. Computer games make these functional aspects apparent in different ways depending on the game or game genre. Hinske et al. (2007:2) describes some purposes for games where Lindley (2003) talks about forms and functions. The purpose or function of the game is the reason a specific game is played. Is this game played for entertainment or is it played for educational purpose? Lindley (2003) says that this purpose is decided based on the narrative the game used. What story is the game telling and how? Repetitive game play refers to what the game is all about. What does the player have to do throughout the game to achieve the goals of the game? Lastly Lindley (2003) mentions simulation: a game simulates, for example, a specific environment or scenario for the player to progress through. This simulation can be recreation of reality or the creation of a fictional world. A new table was compiled (Table 3), based on Salen and Zimmerman's table (Table 2) and including the definitions from the other authors as well as their discussions on elements that influence games.

Elements of a game definition	Salen and Zimmerman	Lindley	Hinske et al.	Eyles and Eglin	Juul
System/ Framework / Computer generated world	X	X	X	X	
Players / Participants	X	X	X	X	X
Players engage / interact	X			X	X
Artificial conflict / Contest/ Effort	X	X	X	X	X
Risk			X		
Defined by rules	X	X	X		
Quantifiable outcome / goals	X	X	X		X
Value attached to the outcome			X		X

Elements of a game definition	Salen and Zimmerman	Lindley	Hinske et al.	Eyles and Eglin	Juul
Purpose		X	X		
Location of the game				X	

Table 3: Elements of a game definition, expanded

The table (Table 3) can be summarised in the following elements that will all be used to define a game for the purpose of this study:

- A game must have rules
- A game requires participant(s)/player(s) that interact with the game or one another.
- A game must create conflict. The conflict is artificial in nature and also implies risk.
- A game must have outcomes that influence a player's decisions (what obstacle to tackle based on the outcome of the specific obstacle)
- A game must require effort from the player
- The location where the game is played plays a role in the game
- A game must have a specific purpose

2.2.2 Components of games

With the requirements elements of a game established, certain components of games that address and encapsulate these requirements must be investigated. The components addressed in this section will be mechanics, goals and rewards, and narrative.

2.2.2.1 Mechanics

An understanding of what game mechanics are, is an important part of game design. The combining of game mechanics creates a certain game (Björk, Lundgren & Holopainen 2003:3). This game then provides a gameplay experience to the player which will result in the player liking or disliking the game. The mechanics can be seen as the core part of what a game is. By combining both rules and game mechanics a game system is formed which then governs the player's inputs and interactions with the game world. This section looks at the mechanics of a game.

A game mechanic is simply any part of the rule system of a game that covers one, and only one, possible kind of interaction that takes place during the game, be it general or specific. A game may consist of several mechanics, and a mechanic may be a part of many games. (Lundgren & Björk 2003:4)

Any game must have mechanics and mechanisms for the player to exploit and use. This enables the game to be played. Lundgren and Björk (2003) describe a game mechanic as one type of interaction that the player performs during a game. This can also be read as the participant (player) interacting with the game system through a specific mechanism that is guided by rules. The mechanism is at the centre of this interaction.

Examples of game mechanics can be the following (Lundgren & Björk 2003):

- Dice rolling – This mechanic is used in almost any game available (computer based or paper based). Dice rolling adds a random number element to the game which removes

control from a player's hands for certain elements of the game. The player can do only so much and the rest is up to the random roll of the dice.

- Counters – Many games use some form of counters in the gameplay. Counters range from scores to gauge the players' performance to a certain task that needs to be performed a certain number of times before something else can be done.
- Roll and move – By combining the dice rolling mechanism with player character movement another mechanism is created. Roll and move is mostly seen in board games but can be seen in some computer turn-based games. A random number is generated (electronically or by rolling a dice) and the player's character then moves those number of movement measurements (squares, game meters etc.).

The above-mentioned mechanics are a very small list of mechanics that can be found in most games. It is very difficult to compile an exhaustive list of game mechanics that can be generalized to all games. The previous list provides examples of three game mechanics. Hunicke, LeBlanc and Zubek (2004:3) give a definition for mechanics and also provides a list of example mechanics. Again they claim that the list is in no way exhaustive but provides insight into the mechanics and the gameplay they lead to.

Mechanics are the various actions, behaviors and control mechanisms afforded to the player within a game context. Together with the game's content (levels, assets and so on) the mechanics support overall gameplay dynamics.

(Hunicke, LeBlanc & Zubek 2004:3)

Hunicke, LeBlanc and Zubek in their paper proposing a framework for the formal approach to understanding games, define a mechanic as a control mechanics, something the player uses to influence the game and game world. According to Hunicke, LeBlanc and Zubek (2004:3) this interaction helps support the gameplay dynamics.

Hunicke, LeBlanc and Zubek (2004:4) also list what they consider to be examples of game mechanics and the dynamic interaction/gameplay it leads to:

- Mechanics of card games can include shuffling and betting and can lead to bluffing.
- Shooter game mechanics include weapons, ammunition and spawn points which lead to camping (hiding in a location where it is difficult to get the attacker and where the attacker has a demanding vantage point to kill from) and sniping.
- The game of golf can include mechanics like balls, clubs, sand traps and water hazards.

Unlike the previous examples of mechanics, the next definitions of mechanics attempt to provide clarity on what game mechanics are. The authors attempt to describe the purpose of the game mechanic rather than what can be considered to be a game mechanic. Providing examples of mechanics aided the previous authors in clarifying their definitions of game mechanics.

Salen and Zimmerman define game mechanics, and specifically core mechanics as the "essential moment-to-moment activity" players take part in (2003:316):

Core Mechanics represent the essential moment-to-moment activity of players. During a game, core mechanics create patterns of repeated behaviour, the experiential building blocks of play.

(Salen & Zimmerman 2003:316)

The activities of players then form what they call a "pattern of repeated behaviour" that will continue throughout the play of the game. These patterns can and will change as variations on the mechanics

are introduced during gameplay. The core mechanic will remain the same and will be the basis of the player's actions and activity throughout the game.

Jesse Schell describes mechanics as procedures and rules:

These [=mechanics] are the procedures and rules of your game. Mechanics describe the goal of your game, how players can and cannot try to achieve it, and what happens when they try.
(Schell 2008:41)

Schell links the mechanics to the rules of the game, the activity the player wants to perform, the goal that will be the result of this activity and how to achieve this activity. Fullerton, Swain and Hoffman also describe a game mechanic as game procedures, more specifically as “the actions and methods of play allowed by the rules” (Fullerton, Swain & Hoffman 2004:25). These procedures, built from rules, guide the player's experience and create interaction.

Järvinen defines game mechanics as a means to guide players into behaving in a specific way in a limited space to attain the game goals (2008:254). The limited space Järvinen refers to is similar in concept to the space of possibility described by Salen and Zimmerman (2003:66).

Järvinen (2008:254) also describes rules and mechanics as having a close relationship by defining a mechanic as “a particular set of rules available to the player in the form of prescribed causal relations between game elements and their consequence to particular game states”. Adams and Dormans (2012:3) also state rules and mechanics are similar concepts. They go further by saying that specifically in game design, game designers deem rules as “the written down rules” where mechanics are more “detailed and concrete”.

Adams and Dorman (2012:4) prescribe certain characteristics to game mechanics. Specifically, core mechanics are the most influential of the mechanics because they effect many aspects of the game (the more defining mechanics) and that game mechanics are media independent (Adams & Dormans 2012:4). Media independence of mechanics means that when the mechanic is designed, it can be both implemented in a paper-based or board-based game or a digital game. The mechanic remains the same across all media.

Adams and Dorman (2012:9) also differentiate between two different types of mechanics for games: discrete and continuous mechanics. An example of a continuous mechanic in digital games would be the continuous calculations the system has to do to maintain the illusion of game physics. Continuous mechanics are “precise mechanics that create a smooth continuous flow of play” (Adams & Dormans 2012:9). Game elements that belong to a determinate set that does not allow gradual transitions are called discrete mechanics. An example of discrete mechanics would be a game power up.

Finally, Fabricatore describes mechanics in the following way:

[...]a player-centered perspective can lead to defining game mechanics as [...] proper tools for gameplay, atomic rule-based interactive subsystems capable of receiving an input and reacting by producing an output. Such output translates into a state change of the mechanics itself and/or into the triggering of new interactions with other game mechanics.
(Fabricatore 2007:6)

Fabricatore's definition includes the specific mention of input and output. He goes on to include the fact that this interaction by the player, the input by the player and output by the system, results in the game state changing. This is similar to Sicart's (2008:3) definition of game mechanics: “an agent invoking methods, designed for interacting with the game state”.

2.2.2.2 Goals

Game goals and rewards are linked in game design. When a goal is achieved the player will receive some kind of reward. These rewards can be something relevant in the game or it can be the reward of completing the game objective or goal.

As discussed in the previous section, game mechanics describe the actions that players can take in the game. These mechanics can then be linked to the goals. Schell (2008:41) includes goals in his definition of mechanics and goes so far as saying that game mechanics describe the goals. Järvinen (2008:254) says that game mechanics guide the players through the space to achieve these goals.

2.2.2.3 Rewards

Together with game goals mentioned in the previous section, rewards should also be considered. Participating in the game, players do expect rewards. These rewards can vary from in-game rewards; items that have a value because of the context created by the game, or the reward of escaping from the real world and participating in an imaginary world for a few hours.

Hallford and Hallford (2001) state that players are interested in victories and treasures, not the obstacles (Hallford & Hallford 2001). They maintain that players should be rewarded for participating in the game and exploring the game world. One can argue that the obstacles are important as they influence the value of the reward received. If the obstacle was not easy to overcome then the reward feels more important than receiving a reward for completing a simple action. Hallford and Hallford (2001) succeed in highlighting that rewarding players is a very important part of games, not just obstacles and goals.

Rewarding the player too much, thus making their game character extremely powerful, can also result in the player become bored. The difficulty of overcoming the obstacles in the game to achieve the goal and receive the reward has an influence on the player's level of boredom. By giving the player too much power he/she will still achieve the goal but will also experience tedium because of the lack of challenge in achieving the goal (Salen & Zimmerman 2003:352).

Salen and Zimmerman (2003:346) summarized Halford and Halford's (2001:157–160) classification of the types of rewards as follows:

- “Rewards of Glory” – experiential rewards. These rewards have no influence on the gameplay. The player takes this away from the game.
- “Rewards of Sustenance” – rewards required by the player's game character to “maintain the status quo” the player has achieved up until that point in the game.
- “Rewards of Access” – rewards that provide the players with access to game locations, new abilities or specific items. These rewards are “single use” and consumed on use.
- “Rewards of Facility” – rewards that enhance the player's game character, enabling the player to achieve more within the game.

Konzack (2002) acknowledges that rewards (and penalties) are factors in games according to Ludology (the study of games). Goals are what are required to win a game. Winning can be seen as a reward (as mentioned earlier). Obstacles are what a game puts there to make achieving the goals difficult. Overcoming obstacles can help the player achieve short term goals and may reward the player (or punish his/her failure).

2.2.2.4 Narrative

Narrative has been studied in humanities for a very long time. The debate surrounding narrative in games is a heated one with opposing views. Some researchers argue that narrative is a part of games (Zimmerman 2004; Lee, Park & Jin 2006; Bizzochi 2007; Simons 2007) where others argue that “even if something can be presented in narrative form does not mean that it is narrative” (Juul 2001). In his earlier work, Juul (1999:1) even went so far as to say that games are not a narrative medium and that they “cannot tell stories”.

The argument for games and narrative is one that stems from the difference between the mediums that are used to study narrative. The earlier works for narrative were done on linear mediums such as movies, novels and theatre but as interactivity became involved, the research struggled to apply the traditional principles of narrative. Any investigation in narrative and games will show the major debate between narratologists and ludologists. It is important to understand the difference between narratology and ludology as these two fields of study continuously clash in the literature.

Narratologists originate in the humanities and can be defined as “a scholar who studies narratology, a set of theories of narrative that are independent of the medium of representation” (Frasca 2003). Frasca (2003) then expanded and added that narratologists in games can be defined as “a scholar that either claims that games are closely connected to narrative and/or that they should be analysed – at least in part– through narratology”. Finally Frasca (2003) settled on Mateas’ definition of narrativists:

The narrativists generally come out of literary theory, take hypertext as the paradigmatic interactive form, and use narrative and literary theory as the foundation upon which to build a theory of interactive media.
(Mateas 2002:32)

In this same article Frasca (2003) also provided a definition of a ludologist, saying that a ludologist is someone who studies games and more specifically, video games (Frasca 2003). Game studies and ludology, for the sake of this study, can be considered to be the same.

Jasper Juul attempted to discuss narrative from a game designer’s perspective without discounting the work of narratologists. The standard arguments for games being narrative, according to Juul are (Juul 2001):

- Narrative can be used for everything. Lee, Park and Jin define narrative as a cognitive structure created by the user to understand complex events and satisfy the need to understand (Lee, Park & Jin 2006). Juul (2001) agrees, saying that narrative is used as a sense making device in our lives and a way for us to process events.
- Games feature traditional narrative constructs such as introductions and “back stories”.
- Games share some traits with narratives.

Juul then adds to the argument, providing reasons why games should be considered to be non-narrative (Juul 2001):

- Games are not part of the narrative ecology formed by movies, novels and theatre.
- Time in games works differently than in the above-mentioned media.
- The relationship between the observer and the story world is different from the relationship between the player and the game world. Simons, in the article *Narrative, games, and theory* explains that in traditional narrative the observer is external and watches “what has happened” where in games, the player (not observer) is focused on “what is going to happen” (Simons 2007). Simons, in this case, agrees with Juul though Simons would highlight that the difference is primarily a matter of psychology and phenomenology.

These perspectives add to our understanding of the narratology vs. ludology debate. Juul (2001) is a staunch supporter of saying that games are not necessarily narrative. In his explanation he attempted to separate games from the other traditional media and in that way show that games cannot be explained through the existing framework of narratology. There are similarities but there are, equally important, differences in mediums. Juul (2001) does add that players in games can tell stories, that many digital games do contain narrative elements and that games share some structural traits with narrative.

Eric Zimmerman (2004) in his explanation of narrative, states that existing game narratives are victims of copying from existing linear narratives. Games are a unique medium and have access to different mechanisms than traditional narrative media. Game designers creating games with narratives that resemble traditional media only help further the debate that games are narratives, which is oversimplifying the complexity of how games can deal with narrative.

Zimmerman (2004) builds his definition for narrative with three parts, taken from J. Hillis Miller's model for understanding narrative (Miller 1990) and repeats it in his work with co-author Katie Salen (2003:380). He says that it takes three parts to define narrative:

1. Situation: A narrative has three different components; a starting state, the changed state (events changing the starting state) and the insight brought on by the state as it is now.
2. Character: The personification of events. The character created by the processing of signs which are represented events in an existing system (or context).
3. Form: Patterns and repetition. The pattern formed in story telling from repeating events or themes.

Zimmerman (2004) believes that "story is the experience of narrative". Games can in a unique way, create an experience for players through which they can create their own story.

Jim Bizzochi (2007) proposes that the struggle between "narratologists" and "ludologists" stems from two sources; the misunderstanding of immersion as a mediated outcome and "conflation of story with narrative arc". He argues that if certain restrictions of these concepts are ignored, components of narrative can still be investigated within games.

Bizzochi (2007) explains that the narrative arc is the "framework for the sequence of events that make up the plot we see, and the story we imagine". Traditional narrative requires tight control over the implementation of the details. He argues that interaction takes away the detailed control over the narrative arc. This in turn interferes with the designed framework or narrative arc.

His proposed framework for narrative provides the opportunity for analysis of the role of narrative in games. The framework consists of:

- Character – the entities that populate the created game world.
- Story world – the environment within which the game unfolds.
- Emotion – the emotion displayed by game characters as well as those experienced by the player. This component ties in to what Salen and Zimmerman consider narrative to be (2003:380).
- Narrative interface – This component addresses the disconnect between the pleasure of the story and gameplay by including elements in the interface (the interaction layer of the game) that are narrative by nature.
- Micro narrative – A concept created by Henry Jenkins (2006:679), this component is a piece of traditional narrative placed within the story world or context of the game. Even though the game narrative progresses as they do, the player can still encounter these small pieces of traditional narrative. Mallon and Webb also agree and state that narrative structures can help

provide the player with context within the game. These micro narrative pieces help to justify player actions within the game world (Mallon & Webb 2005).

Lee, Park and Jin (2006) explore narrative and why it is important for interactive media such as games. They propose that even though traditional narrative such as novels, plays and movies differ in format and style, they still have a linear relationship between creator and audience in common (Lee, Park & Jin 2006). They propose that, in games, the players can change the game narrative by changing their behaviour and performance. This blurs the traditional relationship between author and audience.

They define narrative as:

Narrative is a representation of events that provides a cognitive structure whereby media users can tie causes to effects, convert the complexity of events to a story that makes sense and thus satisfy their primitive urges to understand the physical and social worlds.
(Lee, Park & Jin 2006)

By allowing the player the opportunity to interact with the environment and agents within the game, the story is shaped by the player. This results in what Lee, Park and Jin call “interactive narrative” (2006). Mallon and Web (2005) go further by saying that this “cognitive structure” and constraint of the traditional narrative can “provide the basis for freedom and creative action” (2005).

Salen and Zimmerman (2003:383) propose two structural rubrics for understanding narrative components within games (2003:383); the first rubric is the player experiencing the game narrative interactively and the second is as an emergent experience while the game is played.

These two rubrics were termed by Le Blanc during a speech at the Game Developers Conference (LeBlanc 1999) as emergent narrative and embedded narrative. Salen and Zimmerman (2003:383) describe embedded narrative as the “pre generated narrative content” that the players come across while they play the game (2003:383). These components include game cut scenes or scripted events. The embedded narrative components are similar to traditional narrative. Jenkins (2006:681) goes further by explaining that embedded narrative components are interpreted by the viewer (or player) based on their understanding of the world (2006:681). These pieces of information can help to inform player decisions, shape their understanding of the game world (context) and can be used for emergent narrative.

Salen and Zimmerman (2003:383 – 384) explain emergent narrative as a result of a game being a complex system. The interaction of the player with the game is recursive and dependent on the context, meaning that each choice and event inform the next which results in a unique experience every time. The outcome changes based on the state in the game at that moment (including previous choices and interactions). Jenkins (2006:684) describes emergent narratives as unstructured and undetermined, taking shape during gameplay yet not as chaotic and unstructured as real life. He explains that game worlds are not as complex as real world. Everything provided to the player was crafted in some way by the designer but how the player experiences it is based on that specific player, his/her context as well as his previous experience within this game world.

2.2.3 Summary

In the previous section an abstract understanding for games with regards to this study was established. Characteristics and components of games as found in the literature were identified. First and foremost, a game requires rules. Without rules, the game would just be a combination of actions and events. Together with rules, a game requires players to follow said rules. A game must create conflict for the players and must require effort from the players to play it. By playing the game, the players will gain certain outcomes (rewards and narrative) by overcoming obstacles and achieving the

goals set forth by the game (or the player). Certain components in games were explained in more detail to elaborate on their understanding within game studies and game design theory.

2.3 Defining Alternate Reality Games

An attempt will be made to define ARGs and parallel the similarities with games as well as highlight the unique implementation of the defined game components. Questions such as what is an ARG, how does it relate to games and the defined components and what is the nature of the components implemented in ARGs will be answered here.

2.3.1 Defining Alternate Reality Games

In the introduction, three definitions were provided for ARGs. As stated there, these definitions are provided on the primary websites for people who still follow ARGs and participate in them. Two of the definitions are from such websites. The third definition is from a whitepaper created by various people from the game industry. The definitions attempt to condense the complexity of ARGs into simple to understand text. By doing that they are adept at identifying characteristics that can be found in most of the academic discussions to follow.

Bono and Breeze's (2008) definition on ARGology, being the most robust of the three definitions, discusses the characteristics as well as providing simple understanding of how these characteristics interact with one another. They define the narrative as "distributed across multiple platforms" which has to be uncovered by the players through interacting with the game (Bono & Breeze 2008). The player interaction requires the players to collaborate with one another. The authors also characterise ARGs as real time games that do not exist on a single platform and effectively mesh the game world with the real world through the usage of multiple types of media, in effect expanding the frame of the game beyond the computer and the keyboard (Bono & Breeze 2008).

On another popular ARG website, unfiction, they include a concise definition for ARGs in their glossary. Agreeing with the ARGology definition, unfiction also characterises ARGs as cross media games, making use of multiple media for communication (unfiction inc 2002). The definition also identifies "puppet masters" as a secret group of game designers who run the game from behind the curtains (unfiction inc 2002). According to unfiction, a collective detective is required to solve the game. They also describe the narrative of an ARG as "interactive fiction" (unfiction inc 2002). The concept of the puppet master will be discussed in detail later in this chapter.

Finally, the whitepaper definition addresses the ability of an ARG to weave the game narrative into the real world events. The narrative of the ARG intersects real life and in that way creates an alternate reality which is inhabited by the players. The whitepaper, as with ARGology also considers an ARG to be a real time game and making use of multiple types of media (Martin et al. 2006).

As seen from the previous three definitions, there are various definitions available that attempt to classify what an ARG is. This section will attempt to put forth what characteristics are contained within an ARG identified from the literature, as well as combine the identified characteristics from main stream definitions as given in the introduction in Chapter 1 as well as discussed in the previous paragraphs. Many studies were completed since 2001 about ARGs from various perspectives. The literature shows that studies ranging from defining frameworks to more easily develop ARGs, to ARGs in education to the study of collaborative play have been done. Each of these studies implemented their own understanding of what an ARG is. This section will attempt to define what an ARG is to identify the characteristics and components from the existing literature for this study.

Gurzick et al. (2011) approach ARGs as effective tools for collaboration. The authors identified characteristics in ARGs that are differently implemented than in games. For example, according to Gurzick et al. (2011):

- ARGs do not contain explicit rules for gameplay,
- the location of the game is unclear and unlimited,
- the boundaries of play are not clearly defined,
- and even outsiders (or non-players) can become “unaware participants as intermediaries between players” (Gurzick et al. 2011).

This stands separately from what we have established games to be. The play of a game requires the player to be aware of the rules or at least learn them while they play. It also requires an understanding of the boundaries of the game (the barrier between playing and not playing) both physically and abstractly. Gurzick et al. (2011) argue that an ARG can be played anywhere and is not limited by to a location. Gurzick et al. (2011) continue that ARGs’ gameplay blends with real life; as the player plays he/she experiences the gameplay as a part of their daily activities (answering phones, reading email, receiving letters etc.). Players also advance the game through these daily activities (Gurzick et al. 2011). Finally, addressing the characteristics dealing with community and collaboration, Gurzick et al. (2011) found that there is a different social dynamic between the players in an ARG. They form collectives that share and analyse information. The collaboration and community will be discussed in more detail later in this study.

Kim et al. (2009) in their analysis of several ARGs between 2001 and 2009 agree with Gurzick et al. (2011) about collaboration in their findings. Kim et al. (2009) states that ARGs are “designed specifically to tap into the power of collective problem solving” and maintains that this is achieved through the way ARGs tell stories and the unique interaction mechanisms in place in the games. The authors also postulate that these unique mechanisms, what they call “participatory mechanisms” effectively enable the traditional digital gameplay to extend into the players’ reality (Kim et al. 2009). Kim et al. (2009) identified three components (Kim et al. 2009) of an ARG by using the definition of Sean Stewart, an ARG story writer, as an analysis tool (Stewart 2008);

- The communication methods in an ARG are platform independent or make use of multiple and various modes.
- The actions in the game require the collective to perform them.
- The story of the game is interactive and requires the problem-solving participation of the players.

Jane McGonigal, a prolific producer of academic works about ARGs also defined certain characteristics of ARGs. As with Kim et al. (2009) and Gurzick et al. (2011), McGonigal (2003b) defined collective intelligence, collective play and collaborative as fundamental characteristics in the study of ARGs. McGonigal (2003b) also defines an ARG as an immersive game. The author continues to state that ARGs are cross-media (the use of multiple types of media and integrating these media) and they rely heavily on narrative (even so far as turning the players into producers of narrative) (McGonigal 2003b). Finally, McGonigal (2003b) talks about what she calls virtual immersion. Virtual immersion is where the natural setting of everyday life becomes the immersive framework. The virtual play of the game is integrated into the players’ online and offline lives (McGonigal 2003b).

In 2004 McGonigal defined an ARG as:

An interactive drama played out online and in real-world spaces, taking place over several weeks or months, in which dozens, hundreds, or thousands of players come together online, form collaborative social networks, and work together to solve a mystery or problem [...] that would be absolutely impossible to solve alone.
(McGonigal 2004)

McGonigal, continuing her work with ARGs, also defined them as anti-escapist games and argued that ARGs are not played to escape real life but to get more out of it (McGonigal 2011).

David Szulborski (2005) focused on the immersive nature of an ARG and the ability of the game to combine the real world into the world of the game, resulting in the player becoming more immersed in real life and not having to become a part of an artificial world. Örnebring (2007) also speaks to the ability of an ARG to immerse the player in a fictional world and adds to the characteristics of an ARG by calling them “a form of internet-based mystery game”. The author also states that an ARG requires collective problem-solving (Örnebring 2007).

Dena (2008) defined ARGs as a form of transmedia storytelling:

[...] they provide unique elements in a variety of media platforms. All components are delivered through so-called real world media such as email, fax, SMS and websites. It is the task of players to collaborate to uncover clues and plot points, solve puzzles, create content, converse with and rescue characters. They do so over weeks and months, mediums and continents.

(Dena 2008:42)

The definition again deals with the cross-media nature of an ARG, the collaboration of the players to further the game (solve problems, collect clues) and the role of the players as content creators (producers). Dena (2008) also specifically mentions the time frame of an ARG, as McGonigal (2004) did, and the non-specific nature of the location of the game (Dena 2008).

Bonsignore et al. (2012) approached the study of an ARG from the perspective of literacies and how effective ARGs can teach and exercise these literacies. The authors considered ARGs as part of the genre of transmedia fiction or transmedia storytelling as Dena (2008) did. The authors talked about how ARGs are played, stating that players playing an ARG are a “dynamic and mutable interplay between producer and player, one that relies on the overlapping literacies of each” (Bonsignore et al. 2012). The player is again mentioned as a producer (content creator) and the various expertise of the players in the form of different literacies is considered a requirement for the play of the game.

Hansen et al. (2013), as Bonsignore et al. (2012) and Dena (2008), also consider ARGs as a genre of transmedia storytelling and stated that that was due to the core mechanic of ARGs. The core mechanic of an ARG, according to Hansen et al. (2013), is “to engage players in scavenger-hunt-like missions to collectively uncover, interpret, and reassemble the fragments of a story that is distributed across multiple media, platforms, and locations”. As with the other authors, Hansen et al. (2013) mentioned the tasks requiring the collective of players to play the game (uncover, solve, interpret and reassemble). Hansen et al. (2013) also alluded to the type of challenges facing the players calling it “scavenger-hunt like” missions. Hakulin (2013) touched on the type of challenges stating that ARGs may contain online puzzles and real world challenges. Hakulin (2013), as the other authors, was acutely aware of the collaborative nature of ARGs, the cross media nature of the gameplay, the player involvement in narrative and game progression as well as the variety of skills required by the different players (Hakulinen 2013).

Finally, Chess and Booth (2014) stated that ARGs create game spaces to relay information through a variety of media (both online and offline) (2014). This “conceptual space” supersedes the players’ reality and their everyday lives. Chess and Booth (2014) consider an ARG to be an emergent form of storytelling and design, alluding to the game’s ability to enable players to participate in both narrative creation and creation of gameplay opportunities.

Through these various authors’ analyses of their understanding of what an ARG is, the study can establish a set of characteristics that can be considered integral to what an ARG is and begin to develop an understanding of how they work.



Legend: Bono and Breeze (1), unfiction inc (2), Martin et al. (3), McGonigal (4), Kim et al. (5), Gurzick et al. (6), Szulborski (7), Örnebring (8), Dena (9), Bonsignore et al. (10), Hansen et al. (11), Hakulinen (12), Chess & Booth (13)													
Characteristics of an ARG	1	2	3	4	5	6	7	8	9	10	11	12	13
Collective Intelligence/Collective problem solving/ Collective detective	X	X		X	X			X		X		X	
Collective play				X	X	X			X	X	X	X	
Immersive game				X									
Cross media/ Multiple media/ Multiple communication technologies	X	X	X	X	X				X		X		
Collaborative	X			X	X	X			X		X	X	
Narrative/Interactive narrative/Content creation/Distributed narrative	X	X	X	X	X				X		X		X
Virtual Immersion/Integrated reality/ Alternate reality	X		X	X	X	X	X	X	X				X
Real time	X		X	X					X			X	
Unclear and unlimited game space						X							
No explicit rules						X							
Transmedia storytelling/ fiction									X	X	X		
Interaction between producer/game and player/ puppetmaster		X								X		X	
Solve puzzles/ challenges/ scavenger hunt like	X	X									X	X	

Table 4: Characteristics of an ARG.

The characteristics of an ARG, as seen in Table 4- by author contribution, include:

- Collective intelligence/Collective problem solving/ Collective detective – part of the collective intelligence is the fact that players will have different and overlapping literacies, all required to solve the problems.
- Collective play – player activity advances the game. The act of uncover, collect, interpret and reassemble is a collaborative task.
- Immersive game – An ARG should be immersive. Immersion entails that the player is participating with the game and the space of the game on a deep level.
- Cross media/ Multiple media/ Multiple communication technologies – ARGs use multimedia to a large extent (digital media) but also employ multiple types of media. The usage of “real technologies” like email, letters, packages and other physical media adds to the effectivity of the integrated reality of the game (see virtual immersion). The undefined communication media is also a strength of an ARG as the players can decide what would be the best way to communicate. The community can form naturally around specific communication technologies.
- Collaborative – Collaboration is a requirement in the creation of a collective intelligence. Players and the various player groups in the community must collaborate on all tasks of a game for the game to move forward. Gameplay tasks can involve solving puzzles, collecting

information, disseminating the information, compiling new information and hypothesis creation.

- Narrative/Interactive narrative/Content creation/ Distributed narrative – The narrative can be both embedded and emergent. The embedded narrative (designed narrative) can be superseded by the emergent narrative. With an ARG, the emergent narrative is thus most evident. The content creation and the player created narrative are a result of collaboration and a manifestation of the collective intelligence in the game. The narrative of the game is also distributed across multiple media.
- Virtual immersion/Integrated reality/ Alternate reality – one of the methods to achieve integration into reality is to use “real world technologies” like email, web sites, faxes, letters and physical artefacts. By doing this, the frame of the game is expanded beyond the traditional game boundaries.
- Real time – An ARG has a finite running time. This results in game events and player events being synchronised in real time.
- Unclear and unlimited game space – This characteristic is a manifestation of the cross media characteristics in that the players are not sure where the game primarily takes place. The result is an unlimited game space because it is not limited by the game or the technology it uses.
- No explicit rules – In formal framing of the game, this characteristic will be true but as investigation in various ARG and the mechanisms they employ shows, puzzles and player challenges require the player to complete tasks. These tasks are guided by rules and limitations. They may mirror reality but are still manifestation of game rules.
- Transmedia storytelling/ fiction – The narrative components of an ARG are scattered across various media. The game narrative is in separate pieces, which the players have to assemble.
- Interaction between producer/game and player/ puppet master – The players interact with game characters who in many cases are manifestations of the puppet masters in the game. This interaction can influence the narrative and can also be classified as game action.
- Solve puzzles/ challenges/ scavenger hunt like – The manifestation of ARG mechanics and game actions can be in various forms. Detail of what these game actions are, are beyond the scope of this study. The importance is that these actions taken within the ARG context, are considered game actions (formally and informally, game prompted or player initiative). By completing these challenges and solving the puzzles the players uncover hidden information that can be narrative, more puzzles or game artefacts to name but a few.

The discussion above provides a summary for each characteristic. Some of the characteristics need to be discussed in more detail to explain how they are interpreted for the sake of this study. The next sections will expand on the discussion of some of the characteristics as well as add to the discourse of ARGs and their unique nature.

2.3.1.1 Collective Intelligence

During the analysis of the literature on the characteristics of ARGs, collective intelligence was mentioned by most of the authors. In ARGs, collective intelligence is called the collective detective or collective problem solving and in some cases collective intelligence. This section provides further discussion on what collective intelligence is and how ARG scholars use the term.

Collective intelligence implies that there is a group of people, taking action with a set of resources (such as information) to achieve a collective result and the results must have a way of being evaluated. Pierre Lévy defined collective intelligence as:

It is a form of universally distributed intelligence, constantly enhanced, coordinated in real time, and resulting in the effective mobilization of skills.
(Lévy 1999:13–19)

Lévy (1999:13–19) focused on the nature of the community that creates the collective intelligence. He stated that the basis of the collective, its primary goal, should be the “mutual recognition and enrichment of individuals” (Lévy 1999:13–19). The pooling of this resource by a group of people enables them to enhance, coordinate and mobilise the intelligence in real time (Lévy 1999:13–19). Lévy (1999:13–19) also described the collective intelligence as something that is born with a culture and then grows with it.

Jenkins (2006) described these new knowledge communities as something that is “voluntary, temporary and tactical” and is also “defined through common intellectual enterprises and emotional investment (2006). This ties in with Lévy’s (1999:13–19) description of a collective intelligence growing with the culture. The culture is the component that births the community. The community, as described by Jenkins (2006), is a group that has a shared “enterprise” and “share emotional investment”. Jenkins (2006) gives as an example of an employed collective intelligence fan communities which are a manifestation of what Lévy calls a “cosmopedia”:

The members of a thinking community search, inscribe, connect, consult, explore [...] Not only does the cosmopedia make available to the collective intellect all of the pertinent knowledge available to it at a given moment, but it also serves as a site of collective discussion, negotiation, and development [...] Unanswered questions will create tension within cosmopedic space, indicating regions where invention and innovation are required. (Lévy 1999:217)

Jenkins (2006) further describes the community, the embodiment of the collective intelligence, as having a dynamic nature. The members of the community change and switch based on their needs and interests and, like Levy (1999:217) stated, are held together by mutual production and “reciprocal exchange of knowledge”.

McGonigal (2007a) explained her experience of a collective intelligence in the ARG “I Love Bees”. She observed, that the collective doesn’t just “gather, master and deploy pre-existing information” but that they “author, discover and invent” new ways of thinking, strategizing and coordinating, all the while being aided by the technology they have at their disposal (McGonigal 2007a). McGonigal (2007a) defined three stages of the ARG “I Love Bees” that resulted in the game based collective intelligence:

- Collective cognition
- Cooperation
- Coordination

During all three stages, there was a group mentality at work enabling the development of this collective intelligence. The players of “I Love Bees” were capable of collaboratively authoring narrative bridges between the components uncovered during the play of the game, made possible by the group shared interest and investment.

McGonigal (2003b) describes a collective intelligence as an “effective distributed problem solving network” (2003b). She maintains that the power of this collective is that the puppet masters can distribute pieces of the problem over different media, separated in physical distance in some cases and still result in the collective combining the clues, solving the problem and developing the solution.

In the case of ARGs, the puppet masters make use of complex puzzles that require a collective intelligence to solve them. This may not be because the puzzles are too complex, but due to the many disciplines the puzzles require to be solved and how the pieces of narrative are distributed. For example, a puzzle may consist of a complex computer science problem, created for the domain of

chemical engineering. So a combination of both computer science and chemical engineering backgrounds are required to solve the problem (solve the puzzle).

The player community of an ARG is the manifestation of a collective intelligence, formed surrounding a specific shared interest or problem. This shared resource of the community is then used on challenges presented by the ARG such as the game puzzles, the compilation and distribution of the narrative and developing strategies to enable the players to progress through the game.

2.3.1.2 *Creating an Alternate Reality*

For an ARG to be seen as one, it needs to create an alternate reality. This reality created by the game can be seen as a kind of magic circle as defined by Salen and Zimmerman (2003:94 – 99), a shared space where the player community can participate in game related activities. Unlike other games, the boundaries of an ARG are more blurred than conventional games, as seen earlier in the chapter. For some ARGs it is hard to see where the game reality (alternate reality) ends and real life begins. The ARG mantra "This is not a game" describes the lusory attitude of the players perfectly (Salen & Zimmerman 2003:99). ARG players also have the ability to believe perceived truth and look past observed reality (McGonigal 2003a).

From the perspective of the game designer, the challenge of creating an ARG is to build an engaging world that is compelling to the player, continuously engages the players through various levels of challenges that cater to the different styles of play, doing so regularly and all the while doing so without the players realising they are being pushed and pulled in the direction the designer desires (Kim, Allen & Lee 2008).

2.3.1.3 *Pervasiveness*

An ARG needs to be pervasive. In short, for something to be pervasive, it needs to be present in everyday life and must cross the boundaries from game reality to real life (McGonigal 2004). The activities completed by the players can contain physical objects that form part of their everyday lives. The players may be required to be at certain physical locations and complete real world task to further the fiction of the game. All these activities and challenges can be completed by leveraging ubiquitous computing and personal mobile technologies that support the collective.

2.3.1.4 *An ARG must be a game*

In the previous section of this review, an understanding of the characteristics of games were established (Table 2). ARGs are at their core, games. They implement the game characteristics in unique ways and even ignore certain characteristics, but they remain games.

Salen and Zimmerman (2003:80) define a game as "[...] a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome" (2003:80). An ARG needs to adhere to all these elements for it to be classified as a game otherwise it will be nothing more than interactive fiction.

As the game definition mentions, an ARG, to be seen as a game, must contain the mentioned characteristics. The system within an ARG is as complex as or more than existing everyday games. The system, like with non-digital games, is run by puppet masters or game masters who make sure that the game flows as they have planned. The puppet masters will also respond, via the game, to player actions and input. The players craft the game narrative as they progress through it and the puppet masters can, in real time, add to the game. There are elements of an ARG that can be run digitally and there is research that proposes that an ARG can run automatically (Hart & Reid 2009) but that is beyond the scope of this study.

2.3.1.5 Cross-media/ No set media/Multiple media

ARGs employ multiple types of media to enable the unique gameplay and community interactions. Firstly, the games spread the various clues and pieces of narrative across various media (McGonigal 2003b; McGonigal 2004; Kim, Allen & Lee 2008; Gurzick et al. 2011). These pieces of narrative can be found via email, on websites, in letters mailed to players, in packages, on a memory card found in a public bathroom (for example in “Year Zero”) or by answering a payphone (for example in “I Love Bees”).

The use of these various types of media include use of “real world media” (Dena 2008) that enables ARGs to effectively blur the lines between the real world and the game world (Hakulinen 2013). By making use of all these types of media and including real world media to facilitate gameplay and game communication, there is no limit to the ARGs game play space. Any action or any piece of information can be part of the game.

The multiple media component of ARG’s also enables the players to communicate with one another by any means possible, be it through existing digital media such as online forum, an active IM group or even email lists or non-digital media such as telephone, packages and letters. The communication media can be digital or non-digital (as with the game play media). The game does not dictate what media the players can and can’t use for communication (Hakulinen 2013).

2.3.1.6 This is not a game

“This is not a game” or TINAG is the mantra of most ARG games. TINAG as described by McGonigal (McGonigal also referred to it as the “Pinocchio effect”) is when the player chooses to believe something is real while still knowing that it is still a game (McGonigal 2003a). McGonigal also refers to TINAG as TING. McGonigal (2003a) observed this first during the play of “The Beast” where the players experienced game events as if they were real. McGonigal (2003a) described it as “not real” but “true” at the same time.

ARGs tend to deny their existence as games. The game will never be advertised as such and even when the game creators are confronted about the game, they will deny its existence. Denial and secrecy is the hallmark of the ARG puppet master. An ARG will not have prizes or any published rules for the play of the game; it will never admit it is a game (McGonigal 2003b; Kim, Allen & Lee 2008). These characteristics were observed by McGonigal in her studies of “The Beast” and during her participation in “I Love Bees” as one of the puppet masters. The debate on the requirement of TINAG and the mindset that goes with it is something that shifts between implementations of ARGs. Educational ARGs tend to forgo TINAG in favour of student participation and getting the students to engage with the game.

This study will argue that TINAG is similar to the lusory attitude defined earlier in this literature study as, the mindset required by the player to accept everything that is required to play the game. The fact that ARGs go out of their way to make it all seem real makes having the lusory attitude so much easier.

McGonigal (2003b) argues that TINAG is a large part of player immersion and primary to the play of an immersive game. The use of these “TING techniques” (a term used by McGonigal (2003b)) to obscure the true nature of the experience as a game also has the lingering effect on players of the game; the players will see games where none exist and seek out solutions where none are required or even possible.

2.3.1.7 Challenges of Alternate Reality Games

ARGs present many challenges. This section will discuss a few to clarify the requirements from the puppet master’s perspective. Challenges that will be focused on include the player types, the game

updates from both the player perspective and the designer perspective, the resources required for an ARG and the fact that most ARGs can only be played once.

2.3.1.7.1 Players

Developing an ARG, specifically creating the game actions related to the gameplay is a unique challenging because an ARG needs to cater to different players and sub groups of players (Dena 2008). There will be players dealing with extremely complex puzzles requiring intricate knowledge of cryptography and then there will be players that are happy to go on a scavenger hunt. All the player types, be they “hardcore players” or “casual players” must feel engaged in a similar fashion (Kim, Allen & Lee 2008). Every player needs to feel that they have an influence in the game, in the group (community) and even in the sub group (focus on specific types of game actions) (Bonsignore et al. 2012).

The scale of some ARGs require large groups of players to coordinate with one another in both resource management as well as real time coordination during gameplay. Even though the players will manage this amongst themselves, the puppet masters must be aware of what the players are doing which in turn will require community management (Bonsignore et al. 2012).

2.3.1.7.2 Game updates

The challenges of game updates are one of coordination and of knowing the community. When the game provides many updates, the content may overwhelm the player base, but if the game updates at a slow pace the players will not have enough to do and the game will become stale (Kim, Allen & Lee 2008).

Playing an ARG, the players can interact with game characters and with the game narrative itself. This requires the puppet masters to interact with the players any time of day during the play of the game (which can stretch for months). A heavy demand is placed on the puppet masters in terms of time (Bonsignore et al. 2012).

2.3.1.7.3 Resources

The resources required to design an ARG are both physical and diverse. ARG cost can vary dependent on the size of the game and its goals. This is both an advantage (ARG for any challenge) and disadvantage (budget can grow based on planned game events) for the designers and is made possible because of the flexibility of ARGs (Bonsignore et al. 2012).

In terms of the designers. ARGs require a diverse skill set from the game designers because the challenges can be almost anything (Bonsignore et al. 2012). The game designers need to produce viable challenges to a diverse player group, while still adhering to the game goals and requirements, all the while maintaining the playability of the game design.

2.3.1.7.4 An ARG is only played once

According to Bonsignore et al. (2012), the majority of ARGs are played only once. Due to the narrative and the interactive nature of the game, players will experience an ARG differently the second time around; the experience may not be as interesting if the narrative of the game is known. The resources required to run ARGs as well as the gameplay of the ARG truly lends itself to only being played once (Hansen et al. 2013). Both Hansen et al. (2013) and Bonsignore et al. (2012) agree that due to this fact, the number of potential players are reduced as well as the possible return on investment for the ARG.

Even though both authors agree about the challenges with regards to replayability in ARGs, they advocate for the fact that educational ARGs can be designed for replayability with compromises (Bonsignore et al. 2012; Hansen et al. 2013).

2.3.1.8 Other characteristics

This section will discuss characteristics unique to ARGs. Illuminating these characteristics will result in a more in-depth understanding of the nature of ARGs, and specifically the components that will be the focus of this study.

2.3.1.8.1 Persistence, expressive and community

McGonigal (2004) provided three characteristics for ARGs: persistence, expressive and community. Persistence means that an ARG is “always on” (McGonigal 2004). The game unfolds in “real time” and players need to be there for the changes and events or they will miss them. Expressive entails that the players of an ARG are required and inspired to be self-expressive (McGonigal 2004). The players are required and inspired to create their own content in the game, to link what they know about the game with their own theories and assumptions. This forms the core of playing an ARG. For the players to effectively express themselves during the game, they are required to “be part of something bigger” (McGonigal 2004). The players can “actively engage with one another in a local and distributed community” (McGonigal 2004).

Community will be discussed in more detail later in the literature review as it forms part of the section, the nature of ARGs (2.6.1 Collaboration – the player community).

2.3.1.8.2 Virtual Immersion

As established earlier in the study, one of the characteristics of an ARG is the ability to create virtual immersion. With virtual immersion, the natural setting, the real world, becomes the immersive framework. This enables the players to inhabit the game world as it is integrated in both their online and offline lives (McGonigal 2003b). Virtual immersion, according to McGonigal (2003b), is achieved through the use of “real world technology” instead of specialised equipment or methods. Players can experience the game not as a virtual or augmented reality but more as an alternate reality.

2.3.1.8.3 The rabbit hole

The rabbit hole, according to the unfiction glossary is defined as

*The initial site, page, or clue that brings someone into the game.
(unfiction inc 2002)*

The rabbit hole is the game entry point (Örnebring 2007; Kim et al. 2009) and is inspired by Lewis Carroll’s story where Alice falls down the rabbit hole into another world (Kim et al. 2009). The rabbit hole serves as another mechanism to engage the players in the game and can be used in various components (both narrative and community can use the rabbit hole).

2.3.1.8.4 The puppet masters

The unfiction glossary entry for “puppet master”, written by Sean Stacey, reads:

*An individual working "behind the curtain" to control an alternate reality game.
(unfiction inc 2002)*

The puppet masters are the designers of an ARG (McGonigal 2007a; Hakulinen 2013), the ones who build the challenges and infrastructure, the people responsible for disseminating the clues throughout the various technologies and platforms of the game (Kim et al. 2009). They are the people watching the players, reacting to what they do (Bonsignore et al. 2012). The puppet masters are the ones managing the story, how it is spread and what parts of the narrative are placed where (Gurzick et al. 2011). They are the ARG incarnation of the traditional game master or dungeon master found in pen and paper based roleplaying games.

The term “puppet master” was given to the game designers by the players. The players used the term to contextualize their relationship to the game designers (McGonigal 2007a). The puppet masters work “behind the curtain” where their involvement is obscured from the players. There is a social norm, a social contract between players and game designers, where the players will not peek “behind the curtain” and that the puppet masters and their involvement in the game will remain anonymous until the end of the game (McGonigal 2007a).

2.3.1.8.5 The “power play”

Power plays are a kind of cross between a digital dare and street theatre. They are live gaming events, conducted in public places and organized via digital network technologies, in which players are directed via clues to show up at a real-world location.
(McGonigal 2007a)

The “power play” is the live event in the ARGs. They are real life challenges that link directly with the narrative and events of the game. They require coordination by the players from all perspectives of the player community. They may involve scavenger hunts, interaction with game characters (NPC) or even seeing real world events play out (which were orchestrated by the puppet masters).

2.3.2 Types of Alternate Reality Games

It is also important to mention the types of ARGs that exist. In 2006 a whitepaper was developed by the Independent Game Developers Association (IGDA) ARG special interest group (SIG) (Martin et al. 2006). The contributors were all active members of the game development community and ranged from game developers, writers and academics. The members of the SIG proposed the following types of ARGs (Martin et al. 2006:15–20):

- Promotional
- Grassroots
- Productized/Commercial
- Single-Player
- Training/Educational

2.3.2.1 Promotional ARGs

The first ARG to be deemed such was a promotional ARG. A promotional ARG is designed to promote a product without obvious exposure to the product (Martin et al. 2006; Kim et al. 2009; Gurzick et al. 2011). Dena described a promotional ARG as “commissioned as marketing campaigns and for extensions of traditional media properties” (Dena 2008). Promotional ARGs are funded from outside of the creative team (Kim et al. 2009) and can easily be tied into an existing community, for example: “I Love Bees” and the Halo fan community (for the Halo game) or “The Lost Experience” and the fans of the Lost television show.

Promotional ARGs are used as product tie-ins and targets communities involved in these products. For these reasons games and movie/television lend themselves to promotional ARGs, for example:

- “I Love Bees” was not about the Halo game, but did take place in that fictional universe. It effectively wove the fictional reality into the real world (42 Entertainment 2008a).
- “The Beast” or “The AI game”, again, did not actively advertise the movie AI. The game took some of the elements of the movie narrative and wove a narrative of its own (Anon 2001).
- “Art of the Heist” did mention the product it was promoting (the new Audio A3) but the car was an intricate part of the game narrative (Kiley 2005).

- “Year Zero” - The game dealt with the ideologies evident in the music of Nine Inch Nails and was used as a promotional game for the launch of the album Year Zero (42 Entertainment 2008b).
- “Push, Nevada” (Anon 2002b), “The Lost Experience” (Anon 2008) - These games were based on television series. An ARG narrative can easily use the established narrative and tie its own mystery into the shows.

2.3.2.2 Grassroot ARGs

The grassroot ARG was the result of the ARG playing community’s desire to keep alive their shared interest. Individuals or groups of fans of the genre started creating games around shared interests and with a smaller budget than the larger promotional ARGs (Dena 2008). The player base of the grassroot ARG is smaller than that of the promotional ARGs but there are exceptions (Metacortechs had a larger following than the promotional ARG, “Last Call Poker”). According to the white paper, the grassroot sub-genre of ARGs are “by far the largest in the ARG sphere” (Martin et al. 2006). The white paper will account for games from the advent of the genre (2001) up until 2006. Since 2006 there were production ARGs (Year Zero) but the researcher still agrees with the statement that the largest number of newly created ARGs are grassroot ARGs.

This type of ARG has a high potential risk to fail because of external factors like budget, game design team and the size of the player base.

Examples of grassroot ARGs include:

- “Metacortechs” - created by the fans of The Matrix for the community (Game guide - Anon 2003a; Game archives - Anon 2003b).
- “Lockjaw” - A mystery game about strange events underneath Washington DC (Game archives - Anon 2002a; Game guide - Steve Peters 2002).
- “Chasing the wish” - An ARG making use of a graphic novel created for the game (Game guide - Aveena 2003).

2.3.2.3 Productized ARGs

Productized ARGs are usually developed around a specific product or puzzle component (Martin et al. 2006). This type of ARG attempts to monetize the gameplay to fund the game and become profitable. There have been varied successes with this type of ARG. “Majestic” created by EA (Electronic Arts) attempted to be the first in 2001 but did not succeed in being profitable. Perplex City on the other hand, enjoyed a measure of success.

Examples of productized ARGs include:

- “Majestic”—The game developer (Electronic Arts) sold the game to players, advertising it as a specific experience, but then just before release informed the players the game would not happen because of a strange event (rabbit hole). The first part of the game was free but later parts required people to pay to play (IGN 2001).
- “Perplex city” - A game about a mysterious cube that the players need to find. The game is played and clues are gathered through solving puzzle cards (purchased) (Anon 2007).

2.3.2.4 Single player/ Individual ARGs

Single player or Individual ARGs can be played by an individual in his/hers own time. This type of ARG ignores the requirements set out earlier in the study and does not require a collective to solve the puzzles, does not necessarily run in real time and does not necessarily require a community to play. When a single player ARG launches, the game may evolve to a community based game as the players will share solutions and clues with one another as they discover them.

An example of a single player ARG is “Jamie Kane”, a murder mystery, created by the BBC for teenagers.

2.3.2.5 Educational/ Training ARGs

Educational or training ARGs are built for the purpose of education or team building (Dena 2008). The focus of this type of game would be the acquisition of knowledge or the creation of a specific player community (team building). Funding for these types of ARGs can differ from institution to institution. The educational or training ARG also strives to have a certain level of replayability while minimizing the labour requirement to run the game.

Examples of educational ARGs include:

- “Urgent Evoke” – The game was created by the World Bank Institute to “crowd source” real world solutions to real world problems (World Bank Institute 2010).
- “World Without Oil” –The game was created to simulate a specific number of days after the world ran out of fossil fuel. Players were expected to live as if fossil fuels were not attainable any more (Eklund 2007).

2.4 Pervasive Games and Alternate Reality Games

In this section the relationship between Pervasive Computing (more specifically Pervasive Games) and Alternate Reality Games will be investigated. The definition of Pervasive Computing takes precedence as it is important to understand what Pervasive Computing is before an understanding about Pervasive Games can be achieved. Ubiquitous Computing is briefly mentioned because of its ambiguity with the term Pervasive Computing. Definitions of Pervasive Games are discussed and analysed as well as the various spaces and dimensions they inhabit.

2.4.1 Pervasive computing

The choice to start with Pervasive Computing and Pervasive Games is a logical one as Alternate Reality Games are sometimes confused with Pervasive Games. The inclusion of Pervasive Computing is required to establish a better understanding of the technology used in Pervasive Gaming and also to show the potential technology that can be used in Alternate Reality Games.

A working definition of pervasive computing needs to be established to facilitate the understanding of the technology. A definition of Pervasive Computing according to Banavar et al. (2000:1) is:

Pervasive computing [...] at its core, it is about three things. First, it concerns the way people view mobile computing devices, and use them within their environments to perform tasks. Second, it concerns the way applications are created and deployed to enable such tasks to be performed. Third, it concerns the environment and how it is enhanced by the emergence and ubiquity of new information and functionality.
(Banavar et al. 2000:1)

Walther (2005a:4) describes mobile computing devices as often mobile and wireless. They are connected to hardware (such as a static server) with wireless network capabilities. Walther (2005a:4) uses the terms “wired core” (which refers to the server as in previous example) and “wireless edge” (which in turn is the wireless capabilities of said server) in his description of the infrastructure to which these mobile devices connect (Walther 2005a:5). As mentioned before, these mobile computing devices can be anything from a smart phone to an embedded microchip in a larger device or even a person.

As mentioned in the introduction, it is important to define ubiquitous computing together with pervasive computing as the two terms are ambiguous. Weiser originally discussed the potential for computing to ubiquitous (Weiser 1991). Weiser later provides a more elegant definition of ubiquitous computing:

The goal is to achieve the most effective kind of technology, that which is essentially invisible to the user. To bring computers to this point while retaining their power will require radically new kinds of computers of all sizes and shapes to be available to each person. I call this future world "Ubiquitous Computing"
(Weiser 1993:1)

Weiser (1993:1) refers to the invisibility of the technology from the user while still retaining the effectivity and functionality of said technology. This is because Weiser describes the technology as "invisible" and "disappearing into the background". Weiser's (1993:1) definition of pervasive and ubiquitous computing has many interpretations according to Molyneaux et al. (2012:197) but the definitions remain important when defining ubiquitous and pervasive computing.

According to Nieuwdorp (2007:14) the terms ubiquitous and pervasive are used ambiguously in the study on computing and gaming. Even though the terms are seen as ambiguous, Nieuwdorp says:

When looking at both of these we can see that the terms 'pervasive' and 'ubiquitous' are used in parallel in both computing and gaming; that they have been cross-referenced across the discourses on computing and gaming; and lastly that they have been categorized as subcategories of each other with regards to gaming.
(Nieuwdorp 2007:14)

Based on Nieuwdorp's (2007:14) statements it is safe to conclude that even though ubiquitous computing and pervasive computing are, in certain cases, different from one another, the terms may be used in parallel. According to Weiser (1993:1) the computers need to be invisible to the user. Banavar's (2000) definition of pervasive computing expands on the "invisible" statement of Weiser (1993:1) by including the user's environment. The computation devices need to be invisible to the user, which means it must be seamlessly incorporated into the user's environment. Mobile computation devices are used to communicate with the user's environment to make incorporation easier.

The definition used for pervasive computing for the sake of this study is one given by Ye, Dobson and McKeever (2012:36):

Pervasive computing embodies a vision of computers seamlessly integrating into everyday life, responding to information provided by sensors in the environment, with little or no direct instruction from users. It assumes a number of invisible sensing/computational entities that interact both with users and with the environment in which they operate.
(Ye, Dobson & McKeever 2012:36)

The above definition is independent of specific technology and does not mention specific computational devices. The definition also provides clarity on what pervasive computing is in more modern sense than Weiser (1993:1), Banavar et al. (2000), Walther (2005a:4) and Nieuwdorp (2007:14).

2.4.2 Pervasive games

A pervasive game is created by successfully implementing pervasive computing technology in the play of a game. Montola (2005) describes a pervasive game as a game that has some important and noticeable features that expands the space of play of the game in a “social, spatial and temporal” way. This means that the traditional gameplay space is expanded into a community of players that play together in a shared physical and virtual space, participating in the game in real time:

Pervasive gaming implies the construction and enactment of augmented and/or embedded game worlds that reside on the threshold between tangible and immaterial space, which may further include adaptronics, embedded software, and information systems in order to facilitate a “natural” environment for game-play that ensures the explicitness of computational procedures in a postscreen setting.

(Walther 2005a:4)

According to Walther’s (2005a:4) definition of pervasive gaming the game world created in a pervasive game resides between the physical world and the created or virtual world. The game world is created by making use of technology that provides the necessary information to the player in a natural environment. Simplifying Walther’s (2005a:4) definition: To create a pervasive game the lines between the physical and the virtual must be blurred by making use of pervasive computing technology.

Hinske et al. (2007:12) define pervasive games as:

Pervasive Games are a ludic form of mixed reality entertainment with goals, rules, competition, and attacks, based on the utilization of Mobile Computing and/or Pervasive Computing technologies.

(Hinske et al. 2007:12)

Another definition of pervasive games can be seen from Benford, Magerkurth and Ljungstrand. (2005:54)

Pervasive games extend the gaming experience out into the real world—be it on city streets, in the remote wilderness, or a living room. Players with mobile computing devices move through the world. Sensors capture information about their current context, including their location, and this is used to deliver a gaming experience that changes according to where they are, what they are doing, and even how they are feeling.

(Benford, Magerkurth & Ljungstrand 2005:54)

Benford, Magerkurth and Ljungstrand (2005:54) see the pervasive gaming experience as extending the normal computer game experience (virtual world) into the real world (the streets, the living room or wilderness - physical world) by making use of mobile computing devices and sensors (pervasive computing technology). It is important to note that the context information captured of the player forms part of the game. The captured information, such as the player’s location becomes important and is not just secondary any more. Pervasive games combine the properties and advantages of three worlds, namely the physical, the social and the virtual world, by using pervasive and mobile computing technologies to augment older games or to create new game experiences (Hinske et al. 2007:1–2).

When attempting to define pervasive games it is important to take Nieuwdorp’s (2007) opinion into consideration. She formulates two different perspectives on how pervasive games can be discussed. One is from a technological standpoint where the focus is predominantly on the computing technology

used to facilitate and create the game. The other is from a cultural perspective where the focus is more on the game itself and how the game world can be related to the player's everyday world.

Considering above-mentioned definitions and taking into consideration Nieuwdorp's (2007) two perspectives a working definition for pervasive games (for the sake of this study) can be:

Games that make extensive use of pervasive computing technology to create a game world where the player can experience play where the game world blurs the lines between the physical world and a virtual world.
(Nieuwdorp 2007)

Having established a working definition for pervasive games, it is necessary to look more in-depth at the different parts of a pervasive game. There are many parts to pervasive games but for the sake of this study, the focus will be on:

- The player experience
- The game space

The player experience and the game space are interrelated and in many aspects the line between these two parts are blurred. The players experience is influenced by the game space and the way the technology gives access to the game content. A requirement for a game to be seen as a pervasive game is that the game should blend with the player's everyday context and still provide him/her access to game related information through every day means and technology (Jegers & Wiberg 2006:3).

Firstly some insight into the player experience of a pervasive game.

According to Hinske et al. (2007:13–14) there are four dimensions to pervasive games that contribute to the player's experience. These four dimensions are:

- "Physical dimension" – The sensation experienced by the players when interacting with tangible objects and real people in the physical reality
- "Mental experience" – The intellectual stimulus within the game from puzzles and riddles.
- "Social dimension" – The interaction and communication between players
- "Immersive dimension" – This dimension, according to Hinske et al., influences the entertainment the player gets from the game. The immersive dimension is the immersion of the player in the game.

The four dimensions defined by Hinske et al. (2007:13–14) provide a sufficient summary of what the player experience is in a pervasive game and what influences that experience. These dimensions briefly describe the type of experience a player can expect from a pervasive game. Social interaction as well as interaction with physical objects adds an element of reality to the game. The social interaction refers to interaction with real people, vis-à-vis, other players. Together with the tangible interaction and social interaction, the pervasive game inspires the use of intellect to solve the puzzles and riddles provided by the game. With the added real people factor the mental experience can be quite involving. The immersive dimension provides the player with the type of involvement that does not require much thinking for the player to feel that he/she is part of the game. The player can easily be immersed in the pervasive game world due to the nature of the technology used as well as the combination of the previously mentioned dimensions.

Secondly a discussion of the game space of pervasive games.

Walther (2005a:11) defines pervasive game space as three distinct overlapping spaces:

- “Tangibility space” – A required aspect of pervasive games is the interaction of the player with physical reality.
- “Distributed information space” – Learning and knowing about pervasive games involves the blending of physical and virtual space. Information and the distribution of said information creates a space that enables the player to play.
- “Accessibility space” – Accessibility space is the key to the interweaving of embedded information and tangible space.

The game space defined here by Walther (2005a:11) provides an overview of the realm where play takes place for a pervasive game. A pervasive game takes place first and foremost in the physical reality. Together with the physical reality, an information space is required for the game to be communicated to the player. The distributed information space provides information to the player in such a way that the immersion is not broken. The blurring of the physical and virtual world also takes place in this space. Finally the player must be able to access the different spaces. How the player accesses the information is part of the accessibility space. The accessibility space is responsible for connecting the other two previously mentioned spaces. The interweaving is achieved, for example, through providing access to the information space (in this case distributing the information) through the physical space by making use of tangible objects.

When discussing pervasive games it is still important to investigate the influence of technology on the game itself. By implementing Pervasive Computing technology, the pervasive game is able to become more than just another computer game. According to Jegers et al. (2006:1) the technology used for pervasive gaming provides three dimensions of computer game play:

- mobile, place-independent game play,
- integration between the physical and the virtual worlds, and
- social interaction between players.

It is evident from the three dimensions provided by Jegers et al. (2006:1) that, unlike normal computer games, integration between the physical and virtual world is required. Social interaction is also a strong part of the pervasive game as it accentuates interaction between players. As seen from the definition of computer games, the location where the game is played should not be important. With computer games the player is limited to where he/she can play based on the specific technology being used whereas with pervasive games the location of game play is not limited by technology. The technology encourages the independence from location.

Pervasive games, according to Benford et al. (2005:56) makes use of three types of technology namely mobile displays (for example mobile phones, hand-held computers, wearable computers etc.), wireless communication technology (cellular technology, Bluetooth etc.) and sensor technology (GPS, cameras, microphones, etc.).

As shown above, pervasive games can be created by making extensive use of the technology to blur the space in which the player finds him/her self. The overlapping spaces of interaction, information and accessibility provide a better understanding of what a pervasive game consists of and what the focus is. Pervasive games achieve their pervasiveness through the effective blend of technology with player context. The technology links the game space, which is created by the blending of the previously mentioned spaces, with the player’s experience. The player’s experience is shaped by the effective blending of these three parts, technology, player experience and the game space.

2.4.3 Relating Alternate Reality Games to Pervasive Games

Montola, Stenros and Wærn (2009) describe ARGs as a subset of pervasive games, when they consider pervasive games as a genre of games.

Based on the researchers' analysis and understanding of the literature of pervasive games and ARGs the following can be concluded.

With the understanding that pervasive games influence the player's experiences of the game through various dimensions contributing to said experience, a parallel can be drawn with Alternate Reality Games. Pervasive games use a physical dimension. This means that the player experiences interaction with tangible objects as well as real people in the physical reality. Similarly, Alternate Reality Games enable the player to interact with the physical reality as well as with real objects. The difference is that with Alternate Reality Games the physical interaction can be the main form of game play. The player, for example, will be required to interact with a telephone booth to acquire the newest piece of the puzzle (e.g. "I Love Bees"). The telephone booths in "I Love Bees" were the main communication medium of the game, thus the physical interaction with tangible objects is pivotal in the game play.

Two more dimensions that influence the player's experience is the mental and social dimensions in pervasive games. In Alternate Reality Games these two dimensions often overlap. The interaction between players is required in ARGs due to the nature of the puzzles and riddles within the games. The problems require the work of a collective to be solved and cannot be solved by individuals (in most cases). The social interaction in ARGs is then implied and cannot be removed. The collective communicates in various ways but the social interaction remains the same between the players.

The immersion dimension in pervasive games refers to how the technology and the game are integrated into the player's world to create an immersive experience. Alternate Reality Games create this immersion by intertwining the story of the game and the game world itself into the player's reality. The game world is built on top of the player's reality. It is not hard for a player of an Alternate Reality Game to achieve suspension of disbelief. With pervasive games the players are always aware of the fact that they are playing a game.

The second issue to be discussed is the game space. The game space can be defined as the space where the game takes place. The game world created by the playing of the game. Pervasive games create this game space interweaving physical reality (tangibility space) with the embedded information in the physical reality (distributed information space) by making use of technology and physical contact (accessibility space). To clarify, the embedded information in the physical reality is achieved by applying pervasive computing technology to the player's physical environment. The player then accesses the information by making use of the Pervasive Computing technology. Alternate reality games do not depend on the accessibility space to interweave the tangible space and the information space. ARGs also do not necessarily embed the information into the player's physical environment by making use of pervasive technologies. In the case of ARG's the information is embedded into the environment by physically placing clues at certain events or predetermined areas. For example, in the case of the ARG "Year Zero", memory sticks were hidden in the bathrooms for players to find. In the ARG "The Beast", information was hidden in plain sight on the posters of the movie A.I. ARGs can use pervasive technology to achieve the desired game space but this is not a requirement in the case of pervasive games.

Finally, it is important to mention the technology used within pervasive games. The pervasive technology used in pervasive games is required to tie all the required spaces and dimensions, mentioned above, together. The player's experience is influenced by the pervasive technology. The game space cannot be created without the help of the pervasive technology. Alternate Reality Games also make extensive use of technology but the game can exist without the use of it. An ARG does not require a specific type of technology. Various technologies are used when creating ARGs but none of the technologies are pivotal to the ARG. ARGs use the web to spread the information, but also use live events, printed media or television. The players in an ARG communicate with one another through web based forums or mailing lists. The puppet masters (the creators of an ARG and the

people that keep the game running) can make use of computer based technology to basic telephone calls and sending a letter/package. The use of specific technology can be part of an ARG, as discussed in earlier sections in this review. ARGs make use of multimedia (digital media) in many cases but can also make use of multiple media that include non-digital media. ARGs are not dependent on the usage of technology.

In conclusion it is important to state that even though there are similarities between Alternate Reality Games and pervasive games there are differences as well. They can both be part of the same game genre but in the end, Alternate Reality Games are not pervasive games.

2.5 Other genres of games

2.5.1 Serious games

It is worth discussing serious games as confusion may result when the other classifications are discussed. Serious games are games that have serious objectives as well as entertainment as a focus (Michael & Chen 2005). The serious objectives of serious games do not interfere with the “fun” element of the game or the goals of the game. The goal of a serious game is to use the game to achieve a more serious goal while still maintaining the nature of the game. This means that some genres of games can also be serious games. A digital PC game can be a serious game (“Papa & Yo” – a game enabling the player to understand how it is to live with alcoholism in the home). An ARG can also be a serious game, for example:

- “Urgent Evoke” – solving the world problems by making use of the power of ARGs (World Bank Institute 2010).
- “World Without Oil” – furthering the understanding of what it means to have a reliance on fossil fuels (Eklund 2007).

The above-mentioned games are also identified as educational ARGs.

2.5.2 Mixed reality games

Before Mixed Reality Games can be defined, the technology involved in these types of games needs to be understood. Milgram and Kishino (1994) explained that the technology “involve the merging of real and virtual worlds somewhere along the virtuality continuum”. The best example of this type of technology, according to Milgram and Kishino, is Augmented Reality, which is a means of overlaying digital information over the real world (Milgram & Kishino 1994).

Montola (2010) describes mixed reality games as games that make use of mixed reality technologies and through this technology augment the players experience in a subtle and unobtrusive way.

Mixed reality games are related to ARGs when it comes to the combination of the real world with the virtual world. Hinske et al. (2007) defines Mixed Reality Games as:

Mixed Reality describes a reality somewhere on the continuous spectrum between the real and the virtual environments. Mixed Reality is combination of two worlds, the real and the physical (also sometimes referred to as a hybrid world). The proportion of real and virtual components is dynamic and usually difficult to determine.
(Hinske et al. 2007:11)

Tamura, Yamamoto and Katayama (2001:64) categorise mixed reality:

Mixed reality (MR) is a kind of virtual reality (VR) but a broader concept than augmented reality (AR), which augments the real world with synthetic electronic data. On the opposite side, there is a term, augmented virtuality (AV), which enhances or augments the virtual environment (VE) with data from the real world. Mixed reality covers a continuum from AR to AV.

(Tamura, Yamamoto & Katayama 2001:64)

With the understanding of what mixed reality (MR) is based on the definition given by Hinkse et al. (2007) as well as the categorisation of MR by Tamura, Yamamoto and Katayama (2001:64) a trend in what MRs can be established: the combination of both virtual and real world environments through the use of technology. The difference between VR and MR is that MR does not just use the technology of VR to represent a virtual world (“synthetic electronic data” - Tamura, Yamamoto and Katayama (2001:64)) but also incorporates information from the real world into the mixed reality. The term mixed reality then directly translates to a reality that is achieved through the mixture of created or virtual data and data from the real world by making use of VR or AR technologies.

2.5.3 Trans-reality games

Trans-reality games are types of games where the mixing of the different realities is a general requirement of the game. Lindley (2004) defines trans-reality games as:

[...] games that combine virtual gaming with game experiences staged and played in physical environments, providing a fluid movement of the game experience through its various physical and virtual stages.

(Lindley 2004:1)

This is a very wide definition but Lindley (2004) provides a list of concepts related to trans-reality games:

- Mobile game – The changing absolute or relative location/position of the player while engaging in play (making use of mobile devices) is taken into account by the rules of the game. The location or position is part of the game. For example, the player moves around in the game environment by moving around in the physical environment such as a university campus or a shopping mall.
- Location based game – The static absolute or relative location/position is taken into account by the rules of the game. With location based games the player’s location is taken into account. The movement of the player is not part of the game but where the player is.
- Ubiquitous game – This type of game uses the technology, such as computer and communication infrastructure, embedded in our surroundings as part of the game. Lindley (2004) separates Ubiquitous and Pervasive games from one another by saying that ubiquitous games are games that use the ubiquitous computing technologies.
- Pervasive games – This game experience forms part of the players’ daily lives by making use of the devices and people that surround us. Pervasive games according to Lindley (2004) is a technological as well as a personal experience. The game needs to be part of the player’s daily life. Pervasive games make use of pervasive computing technologies
- Virtual reality – This concept was previously discussed in this section. Lindley (2004) mentions virtual reality here due to the trans-reality nature of the technology.
- Augmented reality and Mixed reality games – This concept was also previously discussed in this section.

All the above-mentioned games are similar in their attempt to combine the physical world (or reality) with the virtual world. Some of these games achieve their goal by use of technology where others, such as mixed reality and augmented reality games, achieve their goals by making use of technology and other techniques (such as storytelling, real life events, television, “factual” information etc.). This is again very similar to what ARGs do. ARGs provide a balance between the use of technology and the use of the other techniques.

2.5.4 Immersive games

Based on the functional understanding of what a pervasive game is from the previous section, the researcher has established that an ARG, even though sharing some of the characteristics of pervasive games, is not a pervasive game. Another term for ARG-like games is immersive games.

An understanding of immersive games can result in a better classification of ARGs. ARGs can be seen as an immersive game (McGonigal 2003a). McGonigal (2003b) proposes that the actual difference between pervasive games and immersive games is the difference between signifier and signified. McGonigal (2003b) states that even though pervasive games and immersive games are functionally similar, the difference comes in with the immersive and collective goals of immersive games. Pervasive games make no secret of being a game. They require specific pervasive technologies to be played and require the player to make a decision to play. In that way they provide a barrier to player immersion: it is not impossible to be immersed in non-immersive games, the argument is that immersive games require less effort from the player to be immersed. Pervasive games do not attempt to hide their “gameness”. Even though pervasive games enable players to interact with one another, they do not enable players to collaborate. The primary difference between pervasive games and immersive games is that immersive games are immersive by nature while with pervasive games immersion is not implied. McGonigal (2003b) argues that collective play is a mode in immersive games.

2.6 The nature of ARGs

To establish the nature of ARGs, the literature has so far provided insight into what games are and how this study defines them and some of their components. There was also discussing concerning what ARGs and how they are classified as well as some of their components.

The literature review defined games in a formalized, structural way by identifying the characteristics and components of games. The elements required for a game were that it should contain a system or a framework and this system should generate a world (via the computer for digital games specifically). The system should create artificial conflict for the players, enabling them to compete with the system, requiring effort from their part when interacting with the system. The players can effectively interact with the system because the outcomes of the players’ struggles are quantifiable, and valued by the players. These outcomes can also be considered goals in some instances. The goals provide the player with a purpose. On the player’s journey to completing the goals, the player is exposed to risk of an artificial nature. The game system is also defined by rules (formalized, structured, repeatable, and unambiguous). The system also requires a player to participate, engage and invest in it.

The elements summarized above can be categorized into three categories: “Narrative or experiential”, “Goals and rewards” and “Mechanics”. The narrative or experiential category contains the elements in the game that deals with player experience and investment as well as the game context (game world). Goals and rewards deal with all of the elements that includes system outcomes, player interactions, challenges and the result of these interactions. Mechanics are the “how” and the “what” of the game. Mechanics describe the activities the players need to do and how do they need to do it. These mechanics are described in the game with rules. “Goals and rewards” and “Mechanics” form the game actions.

With ARGs, the literature review provided characteristics to help define an ARG. These characteristics include the fact that ARGs require collective problem solving and collective intelligence on the part of its player community. This community then engages in collective play which requires collaboration on the part of the players and player groups. The literature also identified that ARGs extensively use multiple media for both gameplay and player communication. The use of multiple types of media is one of the characteristics that enable ARGs to integrate into the players' reality and create virtual immersion. The ARG runs in real time, again aiding integration into player reality as well as resulting in an unclear and unlimited game space. Finally, an ARG is a form of transmedia storytelling that spreads the narrative over different media and requires the players to both interact with it, compile the various pieces collected over time and even enable the players to become content creators. The player interaction with the game can result in changes in narrative and even in gameplay changes.

The above characteristics can be categorized as "Community and Interaction", "Alternate Reality" and "Narrative". The gameplay aspect of ARGs were not discussed in detail as the fact that an ARG is a game means that the gameplay component can be described in the same manner as normal games' gameplay can be described.

Table 5 combines Table 3 and Table 4 compiled earlier in this chapter and provides categorization for the different characteristics. The characteristics are divided for games and ARGs. The three categories used for categorization is narrative component (2.6.2, Narrative – Interactive narrative and the player as producer), game action (2.6.3, Game actions in ARGs) and community and interaction (2.6.1, Collaboration – the player community) and will be discussed in detail in their respective sections.

Table 5 places the two sets of characteristics side by side. First the game characteristics are categorized and sub categorized. The subcategories supply extra differentiation between the characteristics placed in the categories. Secondly the ARG characteristics are categorized and sub categorized into the same set of categories and subcategories. Where a subcategory does not apply, the characteristic is just placed in the primary category. It is important to state that even though the game and ARG characteristics are separated, the game characteristics apply to ARGs as well because ARGs are also games. The ARG characteristics add onto game characteristics and the characteristics in the primary category and subcategories.

Table 5 illustrates how the two sets of characteristics can be combined to provide a complete set of characteristics for ARGs. The categorization shows that each of the characteristics can be placed in one of the three primary categories.



		Games	ARGs
Narrative component	Game narrative/ Story world	<ul style="list-style-type: none"> Artificial conflict - The narrative assist in the creation of conflict. Computer generated world. 	<ul style="list-style-type: none"> Transmedia storytelling/ fiction Narrative/ Interactive narrative/ Content creation/ Distributed narrative.
Game Action	Obstacles, goals and rewards	<ul style="list-style-type: none"> Risk. Purpose. Artificial conflict / Contest / Effort. Quantifiable outcome / goals. Value attached to the outcome. 	
	Mechanics	<ul style="list-style-type: none"> System / Framework - The system/framework facilitates the mechanics. Defined by rules. 	<ul style="list-style-type: none"> Solve puzzles/ challenges/ scavenger hunt like. No explicit rules – There still exist implied rules that guide the functionality of the mechanics of puzzle solving in ARGs.
		<ul style="list-style-type: none"> Cross media/ Multiple media/ Multiple communication technology – The media facilitates the mechanics of the game. Virtual Immersion/ Integrated reality/ Alternate reality. Real time. 	Alternate reality – because of these characteristics the game creates an alternate reality.
Community and interaction		<ul style="list-style-type: none"> Immersive game – the players interact with the game and one another in a way that promotes immersion. Unclear and unlimited game space. 	
	Interaction	<ul style="list-style-type: none"> Players engage / interact. Players / Participants. Location of the game – this is where the game is played. 	<ul style="list-style-type: none"> Interaction between producer/ game and player/ puppet master.
	Player collaboration	<ul style="list-style-type: none"> Even though not explicitly mentioned as a characteristic of games, player collaboration may occur. 	<ul style="list-style-type: none"> Collaborative. Collective play. Collective intelligence/ Collective problem solving/ Collective detective.

Table 5: Combining Table 3 and Table 4 and categorising.

Placing the various tables together (Table 5) results in the focus on three different components of an ARG.

- The narrative component – including how games deal with narrative (engagement and participation on a formal level) and how ARGs deal with narrative (as with games but adding onto it an experiential framing)
- Game action – as defined by the game design theory
- Community and Interaction – how players interact and participate with ARGs.

In the IGDA ARG SIG whitepaper, Andrea Phillips wrote about ARG methods and mechanics. According to the whitepaper:

The basic recipe for an ARG could be boiled down to Exposition + Interaction + Challenges. Each of these components must be present for any given game to be widely accepted as an ARG, but the amounts in which they must be represented and the weight on each leg of the tripod vary widely from game to game.
(Martin et al. 2006:31)

The three components defined by this study are similar to the three defined in the whitepaper. The narrative component is exposition, game action is challenges and community and interaction is interaction. This study attempts to provide more in-depth discussion about the three components as well as provide game design theory background to support the understanding of these three components.

The components all require one another and interweave to form the experiential description of ARGs. This section will focus specifically on how ARGs deal with collaboration and the player community as well as provide examples of how the game actions are implemented.

2.6.1 Collaboration – the player community

The player community in an ARG is one of the most important components to understand and consider when analysing and designing ARGs. The basic interaction of players with a game and one another is compounded in an ARG because of the requirement of collective intelligence, the collaboration for gameplay and the way collective play functions.

The game actions required during the play of an ARG can be extremely complex as discussed earlier in this study. The puzzles require various levels of expertise from a variety of backgrounds. The complexity and the fact that the puzzles can be time-consuming required a collaborative group to solve it (McGonigal 2003b). McGonigal identified collaboration as one of the primary requirements for an ARG because the puzzles are “absolutely impossible for an individual or small group to solve in isolation” (McGonigal 2004). The tasks can require the players to sift through large amounts of data or be in different locations at the same time. The collaboration of the group in both shared intelligence and the weight of their numbers is what makes the usage of the community and their collaboration so unique to ARGs. Even though the group is paramount, the expertise of the individual is still important. Every player brings his/her unique perspective and expertise to the game (McGonigal 2004).

McGonigal (2007a) also describes, in her analysis of “I Love Bees”, that there are three stages of collaborative gameplay: massively distributed content (the game narrative, clues and puzzles are scattered through various media and even geographic locations), meaningful ambiguity and real-time responsiveness (during the play of “I Love Bees” the players were required to perform complex tasks while coordinating the community in real time).

Kim, Allen and Lee (2008) agree with McGonigal (2007a) in stating that “ARGs bring gamers together to collaboratively solve puzzles”, collaboration again being made a requirement because of the nature

of the gameplay. The authors also argue that there are two features of ARGs: compelling story and collaborative gameplay. They describe the collaborative gameplay in terms of player interaction. Players develop their own means of interaction, in this way gather the information, solve the problems and distribute the accumulated knowledge to the rest of the players (Kim, Allen & Lee 2008). This all adds up to the progression of the game. Kim, Allen and Lee (2008) also describe the player community as consisting of different groups: an active core group who is responsible for the actions in the gameplay and a larger spectator group who follows the game progression being made by the active player group.

Kim, Allen and Lee (2008), McGonigal (2003a) and Dena (2008) describe the tasks of the community as one of finding clues, solving puzzles, disseminating the solutions and gathered information and coordinating with one another. Dena (2008) adds to these tasks that the players need to interact with the game characters as well as the fact that this sustained collaboration and interaction takes place over months, using real world media.

Gurzick et al. describe the challenges ARG players are faced with:

challenges of navigating increasing densities of unstructured content, operating with limited timeframes to accomplish goals, defining and managing task reporting, and coordinating potentially geographically distributed teams.
(Gurzick et al. 2011:174)

This self-organizing, self-coordinating player collective needs to complete these challenges to move the ARG forward in terms of gameplay and narrative. In their comparison between traditional collaborative systems in the workplace and ARGs, Gurzick et al. (2011) focused on the following themes: group formation, task management, information discovery and collective storytelling. This section will only focus on the first three and will deal with collective storytelling in the narrative section of this study.

Addressing group formation in ARGs, Gurzick et al. (2011:175) found that the players tend to form sub groups based on geographic location or specific expertise. The group formation was fluid and was influenced by the gameplay (challenges, puzzles, clues, narrative etc.). During an ARG the community can also effectively manage the tasks presented to them. The players are in the position to decide what is important and what needs to be done. When the players have theories, they can test them as the puppet masters provided them with enough time. Players could speculate, and theorize and test their theories for what is needed to progress further in the game and decide themselves if an effective conclusion has been reached (Gurzick et al. 2011:176). Players are also in control of the information discovery and dissemination in the community. According to Gurzick et al. (2011:177), players have three activities: collecting the information pieces and developing theories, discussing the way the players gather the information and how valid the information is, and finally, including the knowledge formed from this process in the collectives' shared wisdom.

The narrative style of an ARG has a large influence on the collaboration component of ARGs. Because the narrative is so flexible, the players are capable of using their own methods in putting the narrative together (Bonsignore et al. 2012). For the players to effectively compile the narrative, they have to take control over the information and assemble it themselves. ARGs lends themselves to this type of "improvisational interplay" between the player and the puppet masters (the manifestation of the game).

2.6.2 Narrative – Interactive narrative and the player as producer

The narrative in an ARG, as shown in the study so far, is unique when considering how games use narrative. The narrative in games primarily appears as embedded or emergent narrative (Salen &

Zimmerman 2003:383). In ARGs the emergent nature of the narrative is core to ARG narrative. This section will attempt to shed some light on how narrative works in an ARG.

In her analysis of “The Beast”, McGonigal (2003b) found that a specific subset of the players of the game, calling themselves the cloudmakers, generated huge amounts of content for the game. The content generated by the cloudmakers enabled other player groups of “The Beast” to also generate their own game-related content based on the generated content of the cloudmakers. In this way, the player does not just consume narrative produced by the game designers and writers but is enabled by the nature of ARGs to become the producer (McGonigal 2003b).

Another characteristic of narrative in ARGs is fragmentation. McGonigal (2007b) calls the narrative in an ARG, specifically the ARG “I Love Bees”, a “distributed fiction”. Dena (2008) ascribes the fragmentation to the transmedia nature of ARGs. The narrative is divided into pieces and spread across the various media (Kim, Allen & Lee 2008). The players can find the narrative by digging through game-related content, solving puzzles, attending game events or participating in game actions. These narrative segments are not self-contained and have a “high narrative dependency between each component” (Dena 2008). Narrative components are not linked “hyper – or intertextually” (Dena 2008) which means the compilation of “the whole story” and filling in of the gaps (Gurzick et al. 2011) is up to the community.

Dena (2008) describes content created by the player community in an attempt to compile the narrative, and as a response to the segments provided by the game designers, as becoming the main product of consumption. Kim et al. (2009) go so far as saying that the player-created segment, the “collective story” supplants the main story and becomes the primary narrative.

The willingness of the player community to not only complete game actions to gain access to the narrative segments (Kim, Allen & Lee 2008) but also to put the segments together is due to the player interest in the narrative. By producing the narrative themselves and supplanting the primary narrative, the players become the main characters and heroes in these stories (Kim et al. 2009). These player-created stories can also be included in the primary narrative of the game (Gurzick et al. 2011).

Gurzick et al. (2011) mention collaborative storytelling as one of the themes of an ARG. Their investigation provided insight into how the player collaboration compiled these “collaborative stories”. As the segments are discovered, the community will discuss the relevance of the segments, place them within the linear narrative and attempt to construct the plot from beginning to end.

The segmented, distributed nature of the narrative in an ARG also supports the diverse player community (Bonsignore et al. 2012). For these pieces to be discovered or unlocked, a variety of expertise and knowledge is required from the player community. So by placing the segments behind knowledge requirements, the diverse nature of the community becomes a requirement for uncovering the ARG narrative.

2.6.3 Game actions in ARGs

The game actions (or gameplay) in an ARG can take on many forms. This section will endeavour to explain some of these “ARG mechanics” but the list will not be exhaustive. Discussing the previous two primary components of an ARG, the conclusion was that the game actions in an ARG are unique in the way they are implemented, managed and interacted on by the players, and how they are targeted to the player community.

Examples of game actions in ARGs can be:

- Puzzles (Hakulinen 2013) – puzzles can range from simple riddles to complex cryptography and steganography. The challenge behind the puzzle from the perspective of the game

designers is that it should only be solvable by a group. This can be done by increasing the difficulty, requiring wide and varied knowledge or even require a number of people to complete (no knowledge, just collaboration).

- Scavenger hunt (Bonsignore et al. 2012) – the scavenger hunt is a chain of actions the players need to take to get to an end point. The different parts of the hunt can contain puzzles that must be solved by the players or it can be simple “go to” instructions left by the puppet masters to the next part.
- Gameplay – this implementation can be traditional gameplay elements interwoven into the game that require the players to complete game like tasks to progress through the ARG.

These examples are in no way exhaustive. The game actions component of the ARG can primarily be described by looking at the provided game theory. Understanding what tasks games set forth for players to complete, the ARG implementation of game actions is easy to see. The interaction between the game action, the community component and the narrative is where the focus of this study will be.

2.7 Summary

This chapter discussed the existing literature of game design theory as well as ARGs to provide a theoretical framework for the rest of the study. Important characteristics and components for both games and ARGs were identified and discussed to develop further understanding of the relevant theory.

The separate discussions were then combined and three primary categories of an ARG were identified and discussed. The three categories were informed by both game design theory as well as literature discussing ARGs and their different components. A table (Table 5) was created to display how these characteristics fit together.

Chapter 3 will discuss the methodological approach to this study as well as produce preliminary analysis results.

3 Chapter 3 – Methodology

3.1 Introduction

Chapter 2 provided the theoretical context for the field of study. This chapter will provide insight into the methods employed by the researcher to achieve the proposal of the conceptual framework.

The study will investigate ARGs as a social phenomenon in its natural setting. Even though the games could not be analysed in real time, the data sources and information is gathered where the players initially developed and shared that information. Because of this, the researcher will approach the research from an empirical interpretivist paradigm. The reason for this is that empirical interpretivism is “concerned with social phenomena in its natural setting” (Pickard 2013:11).

The research paradigm in turn dictates the research methodology. Interpretivist research requires a qualitative methodology. Qualitative research consist of specific research activities such as literature overview, developing a theoretical framework, fieldwork in a natural setting, researcher as research instrument, purposive sampling and iteration of the activities to name a few (Pickard 2013:15). The research as research instrument implies that the researcher and the interpretation of the research cannot be separated. The iterative nature of the study and the emergent nature of the research design means that this study makes use of the qualitative methodology.

Finally, the research method must fit into the paradigm and methodology that was informed by the study. In the case of this study, the researcher selected the case study research method. The rest of the chapter will explain what a case study is and how this study employs the method. Variations on the method are also discussed as well as explanation for the variations and research decisions.

3.2 Case studies as a research method

Case studies are primarily used to study an individual, a group, or organizational, political and related phenomena (Yin 2013). The primary difference between case studies and similar methodologies such as historical studies is that the events studied are contemporary in nature. A case study consists of observations of the events that happened in real time. Yin (2013) also specifies that case studies can help us understand complex social phenomena. Leady and Ormrod (2012) also stated that case studies are suitable to study events, an individual or a program in-depth over a period of time.

The case study methodology does not come without problems. Mouton (2001:149–150) states that because of the nature of a case study, in other words the representation of empirical data, there is a lack in rigour in the analysis of the data gathered. A qualitative case study will require an iterative process when doing the research and can result in more complete information (Pickard 2013:85–94). It is important when selecting a research method to make sure that a case study is the methodology that best suits the research questions and topic.

3.2.1 What are case studies

To understand what case studies are we need to look at how they are used in research. A case study is used when the questions are “How?” and “Why?” and are more explanatory in nature (Case 2002; Yin 2013). It is advisable that when using a case study as the primary methodology to use exploratory and descriptive questions (Mouton 2001).

The sources of evidence for case studies are similar to historical studies but add direct observation of contemporary events as well as interviews with individuals involved in the events. These types of evidence help establish operational links that are traced over time rather than providing frequencies and incidences.

Case studies are empirical inquiries that investigate contemporary phenomenon depth (Mouton 2001:149–150; Leedy & Ormrod 2012:135–137) and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident:

Phenomenon and context are not always distinguishable in real life situations, other technical characteristics, including data collection and data analysis strategies, become the second part of our technical definition of case studies
(Yin 2013:18)

Case studies can contain both qualitative and quantitative evidence (Case 2002; Yin 2013). The case study inquiry deals with technically distinctive situations where there will be more variables of interest than data points. The inquiry benefits from prior developed theoretical propositions to guide the data collection and analysis (Yin 2013) which in turn makes the collection and analysis an iterative process as the researcher's theories can evolve and change over time during the study.

3.2.2 Types of case studies

It is important to mention that there are different types of case studies. Some researchers differentiate between a single case or multiple cases (Case 2002; Yin 2013) where other researchers identify multiple types based on the approaches taken during the studies. Pickard (2013:85–94) mentions three types – the intrinsic study, the instrumental study and the collective study which can be equated to the multiple case study where Gorman et al. (2005:47–60) speaks of observation case studies, interview case studies, organizational case studies, historical case studies and multi-site and comparative studies. Gorman et al. (2005:47–60) differentiate between studies based on the target of the study or the primary method of evidence collection.

3.2.3 Data collection methods and sources of evidence

There are various data collection methods used in case studies. The method for collection is dependent on the sources used for evidence. Examples of sources used for case studies are: documents, archival records, interviews (with expert witnesses), direct observation or the investigators used by the researcher.

Triangulation of the data is important during collection and analysis (Pickard 2013:85–94). There need to be various sources and various collection techniques that can corroborate the same facts or phenomena (Yin 2013). It is important to pick sources that have different biases and different strengths so they can complement each other (Miles & Huberman 1994).

[Case study inquiry] relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result.
(Yin 2013:18)

The use of different sources of evidence as well as different data analysis strategies helps the researcher to distinguish between phenomenon and context in the real life situations.

3.2.4 Why use case studies

Case studies are a valid choice to research complex phenomena due to the variety of evidence that can be collected about single cases (Yin 2013). Case studies also provide an in-depth description of a small number of cases (Mouton 2001:135–137) which results in a large amount of information and detail about single or multiple phenomena.

The approach in case study research is not to enumerate frequencies (statistical generalization) but to expand and generalize theories (analytical generalization) (Yin 2013). Case studies are designed to test hypotheses and find principles to extrapolate to similar cases (Hofstee 2006). The study is guided by general ideas and expectations of the empirical study and may in some cases not require the formal formulation of a hypothesis (Mouton 2001) but the understanding of the theory surrounding the phenomenon is paramount when formulating the goals of the study.

3.2.5 Why multiple case studies

Using multiple cases in the case study methodology can strengthen the results of the study. When using multiple cases, findings from each case can be used as raw data when doing cross case comparisons (Pickard 2013:85–94). Choosing multiple cases can be helpful in building a theory and can be used more effectively to generalize (Leedy & Ormrod 2012:135–137). The reports from the single cases in a comparative case study can also be used to do thematic analysis to write the final report (Lincoln & Guba 1985).

3.2.6 Why not use a case study

Case studies also carry certain risks when designing and executing the study. Various authors, both for and against the use of case studies as valid methodologies, mention these shortcomings. The primary shortcomings mentioned by all authors are the risk of prejudice and bias in the study (Mouton 2001:149–150; Hofstee 2006; Yin 2013). In the case of the researcher, he/she may not be subjective in doing the study. The bias of the researcher can also be a source of error when collecting and compiling the results. Mouton (2001:149–150) also mentions that the researcher runs the risk of losing focus during the data gathering phase of the research.

Another shortcoming in case study research is the lack of basic scientific generalization (Mouton 2001:149–150; Hofstee 2006; Yin 2013). The researcher may not be sure that the findings of the research will be generalizable to other situations (Leedy & Ormrod 2012:135–137). The solution when using generalization is that the researcher should generalize to theoretical proposition and not populations or universes. Case studies are not a sample. Yin (2013) also mentions that the researcher will not be able to establish causal relationships from the findings.

Finally, case studies are extremely time consuming in both the data collection phase and the analysis phase of the research (Mouton 2001) and may result in large documents (Yin 2013).

3.2.7 Selecting a case

An important step in designing the case study (as will be discussed later in this section) requires the researcher to select a specific case or cases to include in the study. The choice of case is guided by the purpose of the study (Pickard 2013:85–94).

When the case is selected the researcher needs to decide where to get evidence about the specific cases. This can be done using judgment sampling (Mouton 2001) or purposive sampling (Lincoln & Guba 1985; Case 2002). The researcher selects participants that match the characteristics of the study. This may introduce bias because of the lack of variety in viewpoints and experience. The problem can be overcome by including other participants with other viewpoints or more participants that can confirm the evidence.

When doing a multiple case study, it is important to choose cases that are different in specific ways (Leedy & Ormrod 2012:135–137). The differences found in the analysis can help with the analytical generalization when conclusions are written.

3.2.8 Designing a case study

The following components are considered important when designing a case study: the study questions, propositions, units of analysis, logic linking of the data to the propositions and criteria for interpreting the findings (Yin 2013).

Formulating the study questions for a case study is an extremely important step, as it is with all research (Pickard 2013:103). Without a clear goal for the study (such as clear questions that establish the purpose of the study) the researcher will not be able to gather the correct evidence. Establishing clear research focus is very important before the commencement of the study (Lincoln & Guba 1985).

Including the researcher's propositions in the design is important, especially with a case study. The researcher must make clear his/her opinions and judgements before the study commences. Theoretical propositions are an important part of case study research as they form the "[hypothetical] story about why acts, events, structure and thoughts occur" (Sutton & Staw 1995). Yin (2013) explains that each proposition directs attention to something that should be examined within the scope of the study.

The third component of case studies Yin (2013) mentions, and Pickard (2013:105) agrees, is the unit of analysis. The unit of analysis deals with the fundamental problem of defining what the case is. The case should be a real-life phenomenon, not an abstraction such as a topic, an argument or even a hypothesis. The case should also provide the most detailed insight into the focus of the research.

The logic linking of the data to the propositions is a foreshadowing of the data analysis step in doing a case study (Yin 2013). Before the collected data can be analysed, the researcher needs to link the gathered data to the provided propositions. How the link takes place is based on the data analysis techniques and thus this component requires the researcher to select the techniques that he/she will be using for analysis.

An important step to consider before starting with data collection is to develop the theories the study will set out to investigate (Yin 2013). The theoretical proposition (Sutton & Staw 1995) development enables the researcher to have in-depth knowledge of the literature and prevailing theories related to the case.

Where Yin (2013) has a more rigid stance to designing and developing case studies, Pickard (2013:85–94) advocates for a more iterative approach to designing and doing a case study. Both authors agree that the focus of the study (questions) should be formulated before-hand as well as selecting an appropriate unit of analysis for the study. Yin (2013) places emphasis on formulating propositions as well as making sure that the data collected links to the proposition (explain or enforce them in some way).

3.3 Research design

There are four problems that research design effectively deals with according to Philiber (1980): "What question to study?", "what data is relevant?", "what data to collect?" and "how to analyse the data collected?". Case studies deal with these problems by defining a research focus for the study (Lincoln & Guba 1985), selecting a case that suits the focus, selecting a unit of analysis (Yin 2013) and finally defining criteria that can help interpreting the findings.

3.3.1 The case study approach

Yin discusses three steps in case studies: developing the case study protocol, collecting the evidence and analysing the collected evidence (Yin 2013). Pickard (2013:85–94) divides the steps in creating a case study into the three phases of research defined by Lincoln and Guba (1985): orientation and

overview, focused exploration and member checking. This section will focus on the three steps defined by Yin. Explanation will be given on how these steps are implemented in case studies as well as explanation added on how these steps were implemented in this study.

3.3.1.1 The case study protocol

The first step defines the instruments and procedures to be followed in a case study (Yin 2013). Firstly the objectives are set out for the study. The objectives will be in the form of research questions that can be answered from the case report. The rationale behind selecting the case as well as the propositions that will be examined during the study should also be explained during this step. The propositions are based on the literature examined before the protocol is designed. The protocol also discusses the sources of data, how the data will be collected as well as the rationale behind the selection of data sources. These data sources also need to be linked to the propositions defined for the study.

3.3.1.1.1 Selecting the case

For this study, three cases were selected. The unit of analysis for each case study was “An ARG that was played until its end”. The three cases were selected using a priori criteria selection. A set of criteria was developed to identify possible candidates for the cases (Table 6).

1	ARG completeness	2	Live game sites	3	Timeline
4	Complete narrative	5	Variety of game actions	6	Detailed game guide

Table 6: A priori criteria for case selection.

1. The ARG must have been run until completed. Games that were abandoned during play could not be included. ARGs that were considered failures could also not be included in the selection.
2. The ARGs should have had live game sites. These were the sites (can be websites, archives, download links etc.) that were used during the play of the game.
3. The ARGs should have contained an accurate timeline. Data sources should have been available to establish an accurate timeline for the game.
4. The ARG should have had a complete narrative. The play of the game revealed a clear narrative which the players could effectively compile during the play of the game.
5. The ARG should have contained a variety of game actions. The game should not have primarily focused on scavenger hunts or online puzzles.
6. A detailed game guide should have been available for the game. The game guide was used as the primary data source for the cases.

After establishing these criteria, online archives of ARGs were consulted. Interactive sampling was used to select cases that adhered to the criteria defined above. The ARG community consistently discussed certain ARGs as the benchmark for future ARGs. The games were consulted based on their popularity and how the ARG community refer to them.

“The Beast” (an ARG created by Microsoft for the movie “AI”) was an obvious choice as it is considered to be the first ARG. “The Beast” had a complex guide with detail on events, puzzles and game artefacts. The game actions were explained well and in detail. The timeline was not clear and many of the player resources were missing (player resources are used to establish an accurate timeline). The guide archived large amount of the game data but could not archive everything. The game sites were not available anymore and the puzzles could not be reconstructed or tested from the archives.

Another popular ARG, “The art of the heist” (created by 42 Entertainment for the release of a new Audi) did not have a singular clear guide. The researcher would have had to consolidate multiple

guides and attempt to construct the timeline from the guides as well as the player resources available. “Perplex City” is another ARG that was identified by the player community and game archives. “Perplex City” ran for almost three years. The game was a large collection of player events. Singular guides did not completely describe the game and because of that, a lot of game detail was lost along the way. Analysing ‘Perplex City’ would not have captured the full complexity of the game because of this lack of detailed accounts and archived game artefacts.

Other ARGs like “Urgent Evoke” and “World Without Oil” were education focused ARGs and, according to the researcher, compromised on some of the required characteristics of what this study considers an ARG to have.

The number of ARGs played since 2001 is vast and in no way were all the games investigated as candidates for the analysis. As previously mentioned, the games were selected based on the a priori criteria listed in Table 6 but also based on how the community discuss them or reference them.

The following cases were selected:

1. “I Love Bees” – a promotional ARG created in 2004, by Microsoft, for the promotion of the launch of the Halo 2 digital game.
2. “Year Zero” – a promotional ARG created in 2007, by 42 entertainment, for the promotion of a music album titled “Year Zero” for the artist “Nine Inch Nails”.
3. “Number 13” – a grassroots ARG created in 2010, by post graduate students at the University of Pretoria, as a capstone to Multimedia studies at fourth year level.

Two of the cases selected adhered to all of the criteria and were identified through interactive sampling (“I Love Bees” and “Year Zero”). The third case was selected as a possible example of an outlier. The third case, “Number 13”, was selected to possibly identify exceptions to the propositions. The researcher was closely involved in the development of the game. That being said, “Number 13” still adhered to the a priori criteria and no internal knowledge or sources (puppet master knowledge, internal design documentation, puzzle solutions etc.) was used during the study. All information reported for “Number 13” from the player perspective was gathered from player created sources (guide/wiki and game sites).

3.3.1.1.2 Objectives and propositions

The following questions were used to guide the objectives of the case study:

- How can the components/categories of an ARG be identified?
- What components/categories were identified?
- How are the components/categories of an ARG sub categorized?
- What structures are formed by linking according to the relationships between the components/categories and subcategories?

How can these structures be used to develop a conceptual framework? The categories in ARGs were primarily informed by the exploration of the literature. From the literature, three components were identified: collaboration and the player community, narrative and game actions. The propositions informing these three categories are:

- Collaboration – An ARG consists of a player community that collaborates and interacts with both game content and one another. This community manifests a collective intelligence that is used during the play of the game.
- Narrative – An ARG is primarily a narrative-driven game. The players interact with the game to discover narrative pieces and then construct them into a cohesive narrative. The construction of the cohesive narrative can include player created narrative to “fill the gaps”.

- Game actions – The game action in an ARG is guided by game design theory. The implementation in ARGs and games are similar in most cases. ARGs also provide players with opportunities to find game play pieces through the heavy focus on exploration of both the game world and the real world.

Using these categories and subcategories to categorise game events will help to identify, in an abstract way, how these components interact with one another as well as the link between them. The one component can lead to another which may lead to another component. Specific components may also interact with more than one other component. This type of abstraction can lead to structures forming. These structures can appear to be repeating and form patterns that can be used to identify a design framework.

Exploring the formation of the structures and looking for patterns in these structures can lead to another layer of abstraction where an ARG can be described by using a combination of these structures. This will then lead to the ability to define a design framework for the design of an ARG as well as a framework that can aid in the analysis of an ARG based on game design theory.

The objective of the case study was to produce accurate game summaries that could then in turn, through analysis, produce the categories and subcategories that will be used to create the game structures. These structures will then enable the formulation of the conceptual framework. The analysis relies heavily on the accuracy and completeness of the game summaries, which will be the results of the multiple case studies.

3.3.1.1.3 Data sources

According to Yin (2013), there are six sources of evidence in case studies: documentation, archival records, interviews, direct observation, participant observation and physical artefacts. Pickard (2013:85–94) describes six data collection techniques that are usually used in case studies: interviews, observations, document analysis, focus groups and sometimes questionnaires. Using these collection techniques requires specific sources of data. Observations can be made directly by observing the subjects interact with one another or it can be made as a participant. Document analysis can be done by accessing the documentation and archival records specific to the case. Questionnaires, interviews and focus groups are done by gaining access to the subjects within the case.

During the study of the three ARGs, a parallel had to be found between the traditional sources of evidence and the sources available specific to an ARG. Because an ARG is only run once most of the times, a heavy reliance was placed on first-hand accounts from the perspective of players.

Game guides are written by specific players during the play of the game. These players are usually very active in the game and tend to consolidate player experiences and details of the game into a single document. This document or game guide serves as a first-hand account from the perspective of the guide writer (who is also a player).

Where information is lacking or more details about player-specific interaction is missing, the game forums and player forums can be consulted. These forums are asynchronous discussions about very specific events, puzzles or narrative. Forums can serve as a form of transcribed conversation between players, read by the researcher after the fact. For the sake of this study, game forums and player forums will serve as second-hand accounts from the perspective of the researcher. These sources of evidence could still be classified specific types of data sources.

3.3.1.1.3.1 Documentation

Documentation produced by the players and puppet masters were used as one of the sources of evidence during the studies of the ARGs. These documentation sources included game sites created

by the puppet masters, player-created game sites and game site content, player forums and communication channels.

The game guides, written by one of the active players were analysed as documents. The game guides were written during the play of the game and were a collection of player experiences and conversations between active players. Guides served as first-hand accounts of the games (see the previous section on data sources). The game guides served as a formal form of documentation.

Game forums and communication media (player forums) were also used as a documentation data source. The amount of data produced by the players was vast. By going through that data, and looking for data dealing with specific instances, the researcher could create context for specific events/actions during the game. As explained previously, these player-created data sources (game forums and player forums) would serve as second hand accounts from the perspective of the researcher. The game and player forums served as an informal form of documentation.

3.3.1.1.3.2 Interviews

Interviews are usually done with people closely involved with the case that is being studied. The interviewer can ask questions guided by the research objectives and in that way produce content that can then be analysed. During the study of the three ARGs, interviews were not possible as the games were played in the past and player contact information is near impossible to collect because of the anonymous nature of the internet. Even though the researcher had no control over what the players wrote in their discussion on the game forums and player forums (the informal documentation), the forums discussions can be treated as an abstract form of “interview”. They can still enlighten the researcher about very specific phenomena and in that way create context as with a traditional interview.

The data sources used for interviews are ex post facto because they are not traditional interviews as they are not live.

3.3.1.1.3.3 Archival records

Archival records for the ARGs were found at various locations. Most of the archived artefacts such as game puzzles, websites, images, videos, live recordings and audio files created for the games were stored on the guide sites. Where archival records were missing, live game sites were consulted as well as media storage sites.

In the analysis of the ARGs, all documentation, both formal and informal, were also considered archival records. Data sources were treated similarly as traditional data sources but in the end, all the records used during the game analysis were archival records.

3.3.1.1.3.4 Direct observations

Direct observation came in the form of the informal documentation (game and player forums). The documentation also included videos and recordings of players completing game actions and participating in “power plays”. Because of the way the forums archived the player conversations, reading through these records served the same purpose as observing the same discussion between the players. This source of evidence allowed the researcher to observe the players participating in very specific ARG events. Viewing the videos of the players interacting with one another provided insight into the interaction between the players. All of these sources (video and forums) are ex post facto therefore are not traditional direct observations because they are not live.

3.3.1.1.3.5 Summary

The primary data source used for the case studies was the written game guides. All the other sources of evidence helped to establish a clearer time line as well as provide the researcher with more insight into specific elements of the game. The guide was always used as the starting point and enabled the researcher to provide a clear narrative and chronological flow in the case reports.

3.3.1.1.4 Linking the data sources to the propositions and goals

As discussed briefly in the previous section, the sources were used to establish a chronological and narrative flow for the game. Each if the types of sources were used to confirm information about the game. For example, when a clear timeline could not be established from a specific section in the game guide, the primary discussion medium was consulted to establish a clearer timeline as those sources usually contained date and time information. If the guide description of a game action, specifically a puzzle, was not clear enough, the live sites were consulted (the sites that were still available) for clarity.

By compiling the game summaries using the above data sources, a more accurate and detailed explanation of the phenomena within the game could be provided. With a detailed game summary that is chronologically accurate, detailed from both player and guide writer perspective and augmented from existing game sites, the analysis of summary could provide the researcher with a detailed understanding of the game. The game summary can then accurately assist in answering the research questions: establishing categories and subcategories and identifying the relationships between the phenomena and their categories and subcategories.

Data sources were not exclusively used for specific tasks. The sources were consulted to provide clarity so that the research objectives could be reached. The decision whether to categorize a specific part of the case narrative was based on the fact that all sources were used to provide as clear as possible picture of the game flow.

3.3.1.2 Collecting the evidence

Because of the emergent nature of case studies, deciding what collection method to use before the study starts is often difficult (Lincoln & Guba 1985; Pickard 2013:85–94). Lincoln and Guba (1985) identified interviews and observations as the obvious collection techniques to use during a case study where Pickard (2013:85–94) added document analysis, focus groups and sometimes questionnaires. These methods have been used in case studies in the past and can help collect the types of evidence that can be found within case studies.

With the three ARGs, the type of information available was different from what would usually be gathered during a case study. The previous section on data sources provided explanation on what data sources are available for ARGs, and how they will be treated in this study. During the study, the data sources were used to construct the complete game narrative. Data from one source was used to confirm data from another source where ambiguity was found (Shenton 2013:251–260).

The analysis of existing data from informal sources such as can be found in ARGs is not without precedent. Shenton (2013) explained that these data sources could be used as background information but also as the primary source of information for specific studies. Certain types of documents could even be used as if they were transcripts produced by interviews and analysed using document analysis (Shenton 2013). The weakness of using these types of sources is that the researcher could not interfere in the gathering of the information. The researcher could not change the direction of conversations or ask more details about specific points made during discussions.

In the case of the ARGs, the information was created purely for recording purposes so people could later consult the sources and have a clearer idea of how the game was played, who played it, how it was played and how long it took. Selecting the three ARGs based on the provided criteria enabled the researcher to confirm some of the information created by the players as well as fill in omitted information from game sources because most of the game sites were still live. The usage of the “logs” also enabled the researcher to see more details on how the players interacted with one another as well as see how they came to solve certain challenges during the game.

These various sources in the end resulted in a more complete and accurate portrayal of the game in terms of its narrative, game actions and player participations than would have been the case if these sources were on their own.

3.3.1.3 Analysing the evidence

After the complete game narrative and chronological order was established, the games were analysed using a technique used in grounded theory. Using the constant comparative analysis technique results in the data constantly being compared with all the other similar pieces of data to “develop conceptualization of the possible relations between various pieces of data” (Pickard 2013:267–281).

During the analysis, categories should emerge from the data and should not be established prior to the analysis. There will be categories identified from existing work which can be similar to the categories that arise from the raw data (Pickard 2013:267–281). Analysing the raw data in such depth was developed by Strauss and Corbin for usage in grounded theory (Strauss & Corbin 1990). The authors called it microanalysis (Strauss & Corbin 1998). Microanalysis is done in three phases, each phase developing and refining the categories based on the phenomena in the data.

3.3.1.3.1 Open coding

The first phase consists of the researcher going through the raw data in-depth. During this iterative process distinct concepts are identified which are the units of analysis for the developing theory (Strauss & Corbin 1998). These distinct concepts can help identify categories based on similar or related phenomena. These phenomena become the basis for the developing theory.

During the open coding phase of the analysis of the three ARGs, the basic categories were developed. These developed categories are similar to the components identified in the literature review. As Pickard (2013:267–281) stated, some of the phenomena will resemble salient issues in the existing work.

3.3.1.3.2 Axial coding

The second phase requires relating the categories with the identified subcategories (Strauss & Corbin 1998:123). Identifying what gave rise to phenomena in a specific context results in the identification of relationships between the categories where phenomena are placed. Patterns in the data will emerge. These patterns enable the identification of links or relationships between the concepts. Relevance of relationships are also established by comparing them with all the other units of analysis within their respective categories. If the relationship links two similar concepts then it must link all the other similar concepts as well. The existence of the links must be relevant and repeatable across all concepts in a specific category or subcategory.

In the study of the three ARGs, this phase enabled the identification of links between the different components in each category. These links are extremely important and have a direct influence on game flow. The patterns identified through observing the phenomena and their links enabled the identification of structures that were repeated throughout each game. Each component could interact with another component in various ways, but by looking at the raw data (the game flow) in the depth required for micro-analysis, these patterns repeated multiple times over the period of the game.

3.3.1.3.3 Selective coding

The final phase of microanalysis requires the researcher to integrate and refine the emergent theory (Strauss & Corbin 1998:143). Core categories are identified which can contain subcategories identified in the first three phases. All categories must fit into these categories. Any category or identified phenomenon that does not fit into these categories must be discarded for that specific study and can become the focus of further research.

In the three case studies, the core categories were primarily identified through the literature review. The core categories did manifest in the third phase of microanalysis. Identifying the core categories in the third phase enabled the researcher to equate the emergent core categories to the existing salient issues in the literature.

Using microanalysis enables the researcher to build theory, handle masses of raw data, consider alternative meanings of the phenomena as well as identify, develop and relate concepts that “are the building blocks of theory” (Strauss & Corbin 1998:13). For the specific analysis of the data collected for the three ARGs, this method proved to be most appropriate as the huge amount of data available for each game required this researcher to iterate through each ARG multiple times and through each iteration new phenomena became evident and their relationships with one another. Identifying the building blocks of the theory also assisted this researcher in proposing the design framework.

3.3.2 Developing the instruments

Each of the ARGs selected for the individual case studies had to adhere to certain selection criteria. By adhering to these criteria, each ARG had a huge amount of raw data that had to be collected, ordered and summarised. This section will describe the protocol used to achieve these goals for each case study. The process was the same during the study of each ARG. The process can also be repeated on different ARGs that also adhere to the selection criteria.

Before each study started, it was ascertained each case adhered to the selection criteria. Each case had a complete game guide, live game sites, archived records for most game puzzles and assets, records of player communication and a basic timeline for the game (extracted from the guide). The process followed during each case study was as follows:

- Create the game summaries
 - Establish narrative flow for the game
 - Establish an accurate timeline for the game
- Analyse the summary using constant comparative analysis
 - Follow the three phases of microanalysis

After the process was followed for each ARG, the microanalysis also took place over all three summaries specifically to verify that all phenomena identified in all three cases could be placed in the core categories and their respective subcategories.

3.3.2.1 Creating the game summary

The game summaries were developed using the raw data available for each game. These summaries were also used as a source of evidence during analysis. This section will describe how the summaries were created.

3.3.2.1.1 Establish narrative flow for the game

The guide for each game was used as the primary source of data during the creation of the summaries. To establish narrative flow the guide was consulted and where gaps were found in terms of narrative they were filled in using secondary sources such as player communications or game sites:

- “I Love Bees” - <http://www.wonderweasels.org/apiary/guide.htm>
- “Year Zero” - <http://www.wonderweasels.org/yearzero/guide/guide.html>
- “Number 13” - <http://num13.pbworks.com/>

The guides were written as first person accounts. Each guide author wrote from their perspective and included content they experienced or encountered on the player communications. Other players

would have provided the guide writer with content if he/she was not aware of certain events. Where this information was not sufficient, secondary data sources were consulted to “fill in the gaps”.

The guide writers also did not always include the full description of certain game assets or game actions. The details for these assets or game actions were found on the live game sites that were still accessible.

3.3.2.1.2 Establish an accurate timeline for the game

As mentioned previously, the guide writers wrote the guides from a player perspective and in some cases during the game, they omitted specific mention of when the events occurred or which event occurred after which event. In some cases the guides were divided into phases and weeks.

To make sure each game was divided into weeks and phases accurately, efforts were made to establish when each reported event, game action or discovery took place. To successfully accomplish this, the live game sites and player communication were consulted. Specifically the logs for these sources (where available). This enabled the researcher to not only construct the game timeline in terms of weeks and phases but also attach dates to the events.

Efforts were made to create an accurate timeline and establish chronology of events. Doing this enabled the analysis to produce accurate relationships between the identified phenomenon and categories. Knowing what phenomenon proceeded which was extremely important for the analysis.

3.3.2.2 Analyse the summary using constant comparative analysis

Analysis of the game summaries took place after they were compiled. The analysis resulted in the researcher having to gather more evidence as shortcomings were discovered during the analysis. Where details were required, the secondary sources were consulted to provide more details. The iterative analysis of the summaries produced a set of categories and subcategories that formed the basis for the design framework.

During each phase of microanalysis, the summaries were refined and structured so that they accurately reflected the game flow. Each piece of the game recounted in the summary was categorised based on the categories and subcategories identified during the microanalysis. The categories were produced by analysing the raw game data used to create the summaries. The creation of the summaries also enabled further analysis which produced more categories and subcategories. Establishing validity of the categories also resulted in the further refinement of the summaries.

3.3.2.3 The categories and their respective subcategories

The following categories were produced during the analysis of the raw data as well as the summaries. Each category will be described briefly. The criteria for each category and subcategory will also be provided.

The rabbit hole	
All ARGs contain an occurrence of a rabbit hole. This was confirmed from the literature. A phenomenon categorised as a rabbit hole showed that this appeared at the beginning of the game.	
<i>A hook</i>	Hooks are used early in the games to pull more players into the game. The hook forms part of the rabbit hole but is not necessarily present when the rabbit hole first appears.
Game actions	

<p>A game action can be described as a phenomenon (visual clue or a piece of information) in the game that leads to interaction. Completing a game action led the players to interact with the game system. A game action is described as a puzzle, mechanic or mechanism that resulted in players completing some kind of action.</p>	
<p><i>Lead-in mechanism</i></p>	<p>Lead-in mechanisms are something physical that serves as the starting point for a game action. This phenomenon can take the form of a visual element, communication to the players by the system or a “something” within the game context that appears strange or out of place. “Something” can take the form of a piece of information, media or even the absence of information/media.</p> <p>A lead-in mechanism can take the form of information found by the players by interacting with game sites that results in the players looking deeper into the phenomenon or investigating an artefact in more detail. Lead mechanisms are not narrative related.</p> <p>Lead-in mechanisms can be implicit or explicit. Where they are explicit during the game analysis, they are sub categorised and given a number. The phenomenon is then included in the game structure.</p>
<p><i>Puzzles</i></p>	<p>Puzzles are phenomena that require players to find a solution to a problem. Game obstacles are considered puzzles. Players can solve puzzles by interacting with the puzzle and analysing what is required from them to overcome this obstacle.</p>
<p><i>Link</i></p>	<p>The link phenomenon was unique to “Year Zero”. The link was a “mechanism” used in “Year Zero” to identify pieces of story, events, puzzles and player actions. The final narrative reward in “Year Zero” was numbered and these numbers were the same as the ones discovered during the game. This enabled the users to make the link between the final “evidence” and the events of the game. The link is an explicit manifestation of an implicit phenomenon within ARGs (players constructing narrative coherence).</p>
<p>Narrative</p> <p>The narrative phenomenon can be described as pieces of information that are received by players as rewards, discovered by the players while investigating the game, information developed by players to fill in contextual gap or information provided to the players by the system.</p>	
<p><i>Narrative reward</i></p>	<p>A piece of information the players received as a reward for completing a puzzle or participating in the game.</p>
<p><i>Narrative hook</i></p>	<p>A piece of information that may lead the players to a different phenomenon. Unlike lead-in mechanisms, a narrative hook is a piece of narrative information that can lead to either narrative pieces or to game puzzles. Narrative hooks can be used by the puppet masters to lead the players to specific components within the game.</p>
<p><i>Narrative</i></p>	<p>The narrative phenomenon is a piece of information that is found by the players. The players can discover these pieces of information by</p>

	<p>interacting with the game characters; it can be provided by the puppet masters for context.</p> <p>The narrative of an ARG can be provided to the players in some cases even though the players did not complete the challenge to claim the narrative reward (in essence changing narrative reward to narrative).</p>
<p>Community</p> <p>These phenomena are all interaction-based and collaboration-based. This categorisation is similar to the community and collaboration component described in the literature review. Player interaction with one another or game characters (which is a manifestation of the system and in turn a manifestation of the puppet masters) are placed within these categories. The subcategories describe a directional relationship between the players and the game system.</p> <p>The interactions can be described as any one of the subcategories. For the sake of analysis, the phenomena are categorised as whichever one of the interactions occurred first (the triggering interaction). In some cases the directional interaction of “player with system” or “system with player” can lead to “player with player” interaction.</p>	
<i>System with player interaction</i>	Interaction prompted by puppet masters. The interaction can lead to community action. The interaction can also be prompted by game characters (game characters are a manifestation of the puppet masters).
<i>Player with system interaction</i>	The community interacting with the game through game characters or through one another. Phenomena categorised as “player with system” interaction can also be the community interacting with the game by interacting with one another via the game.
<i>Player with player interaction</i>	Players sharing information with one another, interacting with one another to participate in the game or players attempting to overcome obstacles by collaborating (manifestation of collective intelligence) are categorised as “player with player” interaction.
<i>External interaction</i>	Any interaction with the game from an external source such as media coverage. Communication that is not game related but is mentioned within the game communication channels. External interaction can result in non-players becoming players, as the external interaction shows the game to people outside the player community
<p>Complete component</p> <p>The complete element describes a combination of the narrative hook, lead-in mechanism, puzzle and narrative reward. This category is a shorthand for specific structures. Details will be described in the individual game analysis. A detailed description of the “complete element” is provided in Chapter 6.</p>	

Table 7: Categorisation of phenomena within ARGs.

3.3.2.3.1 Notes on the analysis and categorisations described in Table 7

Some phenomena categorized as one category may also appear as if belonging to other categories as well as their subcategories. A phenomenon was categorized based on the predominant theme it contained. If something contained game actions but it was primarily the community interacting with one another and the game characters, it will be classified as “Community” rather than “Game actions”.

Even though the identified component can possibly be placed in other categories, it is categorized based on what the researcher thought is its primary purpose.

The content of the categories was not important but the way they interacted with one another. It was important to provide clarity on why certain phenomena were categorized as they were, but for analysis purpose the focus was rather how the categories interacted with one another.

These categories help to break the complex narrative and flow of events into recognizable chunks which formed a pattern when investigated in their base form. These patterns in turn enabled the understanding of ARGs with regards to game flow, player interaction and participation. The relationships were a direct result of the axial coding of the raw data.

The “Community” category, even though required to solve the puzzles and make the game mechanisms work, was not strictly found and categorised to the same detail in every game. Where possible, the researcher categorised the phenomenon as “Community” but in general the interaction is implied. As was identified in the literature review, ARGs require the communities for the game to be played.

3.3.3 Analysis of the cases

Each case was analysed using the techniques and protocols described above. After each study a summary was produced for each of the three ARG analysed. These summaries were written as a descriptive narrative and also contained the categories and subcategories produced during the creation of the summaries. The categories used together with how they were applied were discussed earlier in this chapter.

The next step in the analysis was the detailed analysis of each case summary to discuss the relationships and links between the various categories in each case study. This analysis produced diagrams that abstractly describe each component or phenomenon in each game. These diagrams or structures repeated throughout each game. Structures formed through relationships and linking but many of these structures also interlinked over phases or weeks of the game.

Discussion of the structures for each game enabled the researcher to identify repeated patterns throughout a single game. This also allowed the researcher to compare the patterns across cases. Each game was analysed using this week-by-week analysis to identify the structures. After each case, conclusions and discussion were produced to provide results per game. Results from each game were then compared across all three games to identify similarities and identify patterns across cases.

Finally, the patterns and similarities for all three cases were used to develop a design framework for ARGs. This proposed design framework will enable students of ARGs as well as prospective designers to more effectively understand how ARGs work as well as assist them in the design of new games.

The analysis of the games was not done in detail. No discussion or generalization was made about the type of game actions or media used. There was no in-depth thematic analysis of the narrative of the games. The community in the games weren't discussed or analysed based on their actions or effectivity. The phenomenon within each game was abstracted to such a level that they can possibly be found in other ARGs as well. The relationship between these phenomena and the structures they form was the focus of the study. By identifying these structures using game design theory as well as existing work about ARGs, a theoretical design framework was produced that will enable deeper understanding of ARGs.

3.4 Summary

This chapter described the method used in this study as well as provided in-depth discussion about how the method was implemented. The analysis done during the study was also discussed and the categories that form the basis of the work were produced and described.

Chapter 4 contains the summaries for each game. The categorisation and numbering of each phenomenon will serve as evidence and context for chapter 5.

Chapter 5 contains the detailed analysis of each game. During analysis, references are provided to the number given to the phenomena in Chapter 4, which serves as context and evidence for the described structure. After each game's analysis, a summary structure for each game shows how the game can be described with an abstract structure. At the end of the chapter, each case's conclusion is used to make cross case comparison with the data found.

4 Chapter 4 – The summaries

This chapter contains the analysed raw data in the form of “game summaries”. These summaries are comparable to individual case reports. Each summary contains a narrative description of each game together with the categorization of the phenomena found within each game. The categorization is based on the coding described in Chapter 3.

During the summaries the researcher provided indented text in italics that appears to be quotations. The quotations are summaries of game narrative provided in the game guides as transcripts of game narrative (audio and video) and guide author recounting of game narrative. The quotations are very close to the original source, left so on purpose for clarity sake.

4.1 *Production ARG - I love Bees summary*

4.1.1 Introduction

I Love Bees is an ARG created by the company *42 Entertainment* for Microsoft Game Studio.

I Love Bees was created for marketing purposes for the Halo 2 game on the Xbox. The game had 250 000 active participants and 2.5 million casual participants. Players participated in live events, answering payphones across the USA as well as England, Australia, France and New Zealand. The players collaborated online, consolidating the information they found through the playing of the game. The game created significant attention for the Halo franchise and Halo 2 sold over \$125 million in copies in the first days [Appendix A.1].

The story was about an amateur beekeeping website that had been hacked. The webmaster of the website, a woman called Dana, was the niece of the owner of the website called www.ilovebees.com [Appendix A.2] and enlisted the help of an active community to solve problems that were appearing on the website. The players discovered through a series of events that the web server was infested by an AI from the future trying to protect the spaceship it was part of and its crew. The AI grew through the actions of the players and the game characters, evolved from attempting to destroy the players and Dana to becoming their friend. In the end the AI was sent home to the future.

The use of the payphones and web based technologies told the story and expanded the IP of the Halo universe. The players heard the story through a type of radio drama. They gathered the pieces by completing game challenges and solving puzzles. Throughout the whole experience the game characters continuously interacted with the players, helping them or hindering in their progress. *I love Bees* achieved total immersion by using simple technologies, exceptional storytelling and utilisation of an active community.

4.1.2 Background - Rabbit hole

On July 16 2004 an ARG player received a mysterious package [Appendix A.3]. The package was delivered by FedEx and contained a jar of honey with letters in it (Figure 1). He posted this information on a prominent ARG forum.



Figure 1: The jar of honey delivered by FedEx.

When the player drained off the honey, the letters spelled out "I LOVE BEES" (Figure 2).



Figure 2: The letters found in the honey.

On further investigation the player found the website, www.ilovebees.com [Appendix A.2]. The player immediately investigated the owner of the domain and found it was registered to a company called Margaret’s Honey. The package also contained a return address which was the address of Margaret Efendi [Appendix A.4].

4.1.2.1 Game Action

4.1.2.1.1 Lead-in mechanism

Going to the ilovebees.com website players found that there was something wrong on the website. The images were distorted and some strange message that popped up was displayed on the main page.

4.1.2.1.2 Lead-in mechanism

The website also contained some kind of timer that was counting down to a specific date. The players found the timer also pointed to other dates that may be of importance.

4.1.2.2 Narrative

4.1.2.2.1 Narrative reward

The website distortions were interpreted by the players as someone or something leaving “maydays” and messages on the amateur beekeeper website. These messages were found by the players by reading the site and investigating the source code.

4.1.2.2.2 Narrative hook

The owner of the website left a message on the main page (the index page) asking anyone who visited for help on solving what was going on with the beekeeper website: “What has happened to this site?” and provided the visitor with a link to a blog. The blog post introduced the web master as Dana and she posted some images on her blog of what the website (ilovebees.com) looked like before and how it looked now [Appendix A.5].

4.1.3 Week 0 (13 July 2004 – 20 July 2004)

Week 0 (the rabbit hole and the pregame information) can be found in the guide at www.wonderweasels.org [Appendix A.4].

4.1.3.1 Narrative

4.1.3.1.1 Narrative

The character called Dana created the blog [Appendix A.6] to help solve the problem of her aunt’s website. Dana’s aunt, Margaret, created an amateur beekeeper website and Dana agreed to be the website administrator and technical support in exchange for an all Asia ticket. Dana wanted to solve the problems on the website before she left for her overseas trip. Luckily she enabled comments on her blog so people could try to help her out or try to find out what was going on with the website

4.1.3.1.2 Narrative reward

Dana created a countdown timer on the website to count down the days before she left for her Asia trip. Whatever the hacker or entity

		was, it high jacked her timer and now displayed a different time. The hacker or entity showed the new timer that counts down to when it is “wide awake and physical”.
4.1.3.1.3	Narrative hook	Dana explained in her blog that everything she created and uploaded for ilovebees.com was still there, but was being used for other purposes.
4.1.3.2 Game Action		
4.1.3.2.1	Lead-in mechanism	Within the keywords of the Meta tags, players found words that did not belong on a beekeeper site like “network throttling” and “strong intrusive inclination”. These phrases and words provided clues to the players that something or someone was using the ilovebees.com website for other purposes than its original design. The repurposing of Dana’s countdown timer also pointed the players towards an entity that took over the website.
4.1.3.2.2	Puzzle	On the website itself, when the players refreshed the site multiple times in a row, different messages would appear. One of these messages was “Seek the truth, Behold the truth. Reveal the truth, That is the law and the whole of the law”. There were also instances of hidden text on the pages: single words on a white background with small white text, “seek the truth”, mayday and compute.
4.1.3.2.3	Lead-in mechanism	The site also mainly consisted of images that appeared corrupted. In opening these images in a text editor, text hidden within these would be shown.
4.1.3.2.4	Puzzle	There were multiple versions of the images with different corruptions. In opening all these images and gathering all the pieces of text within them, their first piece of the story, the widow’s story, would be revealed to the players.
4.1.3.3 Narrative		
4.1.3.3.1	Narrative reward	The widow’s story was told by a narrator as if the narrator was dreaming the events. The story was about a widow trying to return her queen to the throne after the queen’s kingdom was struck by an enchantment.
4.1.3.3.2	Narrative reward	Along with the widow’s story, the players discovered the “mayday text messages” on the website from the corrupted images. These text messages appeared on random pages and started with the words MAYDAY MAYDAY MAYDAY. These pieces of text appeared as if they were written by someone who has been shipwrecked or was stranded. The writer of the text also appeared to be tortured by spiders.
4.1.3.3.3	Narrative reward	The third type of story the players found was the computer text. The computer text appeared in black blocks and looked like it was written by a computer. The players had to continuously refresh the page to show them all the different snippets of the computer text. The text

appeared to correspond with the widow's story. The story was written like some kind of pseudo code and appeared to be actions taken by an entity called SPDR.

4.1.4 Week 1 (20 July 2004 – 27 July 2004)

The content of week 1 can be found in the guide at www.wonderweasels.org [Appendix A.4]

4.1.4.1 Narrative

4.1.4.1.1 Narrative hook

On her blog Dana posted all the attempts she made to try and fix the *ilovebees.com* website. She was also concerned about the date the countdown timer pointed to (24 August) and even checked on events in history on the same date. She was worried about Aunt Margaret because Aunt Margaret was not taking the hacking well.

4.1.4.2 Community

4.1.4.2.1 System with player interaction

Dana did convey to the players that her Aunt Margaret appreciated their help and wanted to name a flavor of honey after them. This forced the players to choose a name.

Dana also asked the players to give her a location to point other people to as the players were trying to solve the problem in real time and needed a place to communicate in real time instead of using the blog comment system.

4.1.4.2.2 Player with player interaction

The seasoned ARG players among the current *I Love Bees (ILB)* players already had an IRC channel to chat in (*#beekeepers*) and discuss ARG related information, so the players created another IRC channel called *#ilovebees* and gave this channel's information to Dana.

4.1.4.2.3 Player with system interaction

The players invited Dana to the IRC channel if she wanted to talk to them in real time but she declined, stating that she preferred talking to the players through the blog.

4.1.4.3 Game Action

4.1.4.3.1 Lead-in mechanism

Some of the players received an email from *ladybee777@hotmail.com*. This email was garbled and very hard to understand. The players found that the email was constructed from pieces of emails they sent to Aunt Margaret when they found her email address.

4.1.4.3.2 Puzzle

The theory then arose that whatever entity is infesting the web server of *ilovebees.com* used the player's emails to construct emails to them. As the entity was attempting to communicate with the players they decided to send more emails to the email address to provide the entity with more words.

4.1.4.4 *Community*

4.1.4.4.1 **Player with system interaction**

A player posted a comment on Dana's blog, wondering if he/she was hallucinating when he/she saw the new Halo trailer at the theatre. The player saw the halo URL, www.halo2.com [Appendix A.7] at the end of the trailer change to www.ilovebees.com [Appendix A.2]. The URL change was mentioned a second time by a newcomer to #beekeepers.

4.1.4.4.2 **Player with player interaction**

After the players read the comment by a player about the Halo2 trailer, they immediately started to search for the trailer. They were trying to find evidence if this was true. Players claimed they saw it happen in the trailers, some low resolution images surfaced as it changed. There was still no official confirmation until a high resolution video was found on the web showing the URL change at the end of the trailer. This confirmed that there was a definite connection between I Love Bees and the new Halo 2 game.

4.1.4.4.3 **Player with player interaction**

The players were still exploring the various pieces of content that were provided to them in this phase of *I Love Bees*. The more experienced ARG players were looking for a pattern of updates in *I Love Bees*. Some of the players of *I Love Bees* also participated in the playing of *The Beast* and there the updates happened on Tuesdays and Fridays. It became clear that Dana updated on Fridays. This link between a previously played popular ARG and *I Love Bees* showed that the puppet masters were relying on experienced ARG players to make the more difficult links for the more inexperienced players.

4.1.4.5 *Narrative*

4.1.4.5.1 **Narrative hook**

On the Friday update Dana told the players that all of Aunt Margaret's emails had disappeared from her hotmail account. This confirmed that something was using Aunt Margaret's email to send messages to the players. Dana logged into the account with an old password and attempted to send herself an email but this email was never received by her. She explained to the players that she thought something was intercepting the messages.

4.1.4.6 *Community*

4.1.4.6.1 **Player with system interaction**

Dana told the players that she wanted to delete the email account (ladybee777@hotmail.com). One of the players convinced Dana not to delete it because the players wanted to see what would happen with the account. The players had attempted many technical solutions and none had yielded results yet.

4.1.4.6.2 **Player with player interaction**

The players found that after the Halo trailer, more and more new players showed up at #ilovebees due to Dana's referral. After the new players received an ARG crash course on the #ilovebees channel, they were referred to the #beekeepers channel.

This was the player explosion that the *I Love Bees* creators were looking for. After the new players read about the ARG concept on the IRC channel, they quickly familiarised themselves with the other ARG resources. Soon the unfiction forum [Appendix A.8] was flooded by Halo fans posting thread upon thread of Halo background and fiction.

4.1.5 Week 2 (27 July 2004 – 3 August 2004)

The content of week 2 – 5 can be found in the guide at www.wonderweasels.org [Appendix A.9].

4.1.5.1 Community

4.1.5.1.1 Player with player interaction

Many players waited for the countdown timer to hit 0 (27th July 2004) and most expected it to be at midnight. When midnight came, the players found no changes on the website. The experienced ARG players again assumed that things would be the same in *I Love Bees* as they were in *The Beast*. *The Beast* was updated at noon on the day. The new players, after being disappointed that nothing happened at midnight, decided to wait until 6 o' clock the next morning, but there were still no updates. The site actually did update at 12 in the afternoon as expected by the experienced players.

4.1.5.2 Narrative

4.1.5.2.1 Narrative reward

The update revealed new text on the main page: "Phase 1 complete". The rest of the website also received updates.

4.1.5.3 Game Action

4.1.5.3.1 Lead-in mechanism

New text appeared on all the pages as well as a blurry picture of Dana, called *killer.jpg*, on the *about.html* page. On top of the picture some really threatening text was written aimed towards Dana.

4.1.5.4 Narrative

4.1.5.4.1 Narrative hook

Whatever the entity was within the server, it really hated Dana.

4.1.5.5 Game Action

4.1.5.5.1 Puzzle

The players found hidden links within the source code of the pages. Following these links in sequence, the players found various pages, until trying the next page in the sequence provided them with a 404 error page. The link found in the source code looked as follows:

```
surg.!store.primary.sector.mem.dag.0.0.html
```

Changing the 0 at the end of the link showed 4 more pages (0.1, 0.2, 0.3, and 0.4). Typing in 0.5 showed the players an error page. This 404 error page contained more blurred images of Dana called

killer.jpg. Continuously refreshing the page showed the players more corrupted images of Dana.

4.1.5.6 Narrative

4.1.5.6.1 Narrative reward

Following the other links hidden within the source code the players found pages of what the ilovebees.com website looked like before SPDR took over.

Placing these images in order and removing the text hidden within the images provided the players with a number of questions and answers. These were questions asked by the players and sent to the ladybee777@hotmail.com email address. The images turned out to be various images taken of Dana; some were even taken from her computer's web camera. Someone was watching Dana and replying to the players' emails via Dana's aunt's email address.

4.1.5.7 Game Action

Another puzzle was also revealed to the players during this update on the 27th July. The "fun stuff" pages on the ilovebees.com website contained the following puzzle:

4.1.5.7.1 Lead-in mechanic

On every page there were 3 groups of 7 links. There were 21 pages in the "fun stuff" section of the website which gave the players 308 different links.

4.1.5.7.2 Puzzle

The players found, after searching the links in Google or going to the actual links, all the links were related by topic or had the same group of words attached to them. Each set of 21 links made up one fragment of a sentence (Figure 3).

"Humor me," the Castaway said, playing

Humor Me

<http://members.aol.com/humorme81/>
<http://www.elfs.com/Joka1XTitle.html>
<http://careerhope.com/AM/Harchive.html>
<http://www1.xlibris.com/bookstore/bookdisplay.asp?bookid=1439>
<http://www.mrssurvival.com/ubbthreads/postlist.php?Cat=8&Board=UBB23>
http://www.forbesbookclub.com/BookPage.asp?prod_cd=IEOL8
<http://ssl.adgrafx.com/cgi-bin/checkitout/checkitout.cgi?mikeraybSTORE:CKIE:prodBK-HM>

The Castaway

<http://www.web-books.com/Classics/Poetry/Anthology/Cowper/Castaway.htm>
<http://eir.library.utoronto.ca/rpo/display/poem560.html>
<http://www.readersread.com/cgi-bin/review.pl?reviewid=50201>
<http://www.poetsgraves.co.uk/Classic%20Poems/Cowper/castaway.htm>
<http://www.amazon.com/exec/obidos/tg/detail/-/6305808023/002-8576675-4783267?v=glance>
<http://www.oxygentimerelapse.com/B/Bonnie/p32.htm>
<http://www.worldwideschool.org/library/books/lit/adventure/MobyDick/chap92.html>

Said Playing

http://politicalwire.com/archives/2004/06/17/bush_said_playing_into_bin_ladens_hands.html
<http://www.littleview.com/getcritical/reviews/dolls.htm>
<http://www.cerias.purdue.edu/homes/spaf/web-heads/2001/msg00160.html>
<http://www.namm.com/pressroom/pressreleases/2003Apr21.html>
<http://www.sirwes.net/blogs/sirwes/archives/000114.html>
<http://www.cambridge-news.co.uk/archives/2002/04/29/lead8.html>
<http://cmchippewas.collegesports.com/sports/wr-softbl/spec-rel/050604aaa.html>

music in his room, ancient music, Jazz and Swing,

Music In His Room

<http://www.saviodsilva.net/life/g7/18.htm>
<http://kandaeli.brinkster.net/basic/anrio.htm>
<http://www.futurehorizons-autism.com/futurearticle.asp>
<http://rvte.keenspace.com/persingles.htm>
<http://home.cfl.rr.com/rmd/>
<http://bandit.pc.cs.cmu.edu/suite/quiz/>
http://scrubs-tv.com/previous_episodes4.html

Ancient Music

<http://www.aam.co.uk/>
<http://perso.club-internet.fr/pybertra/ceol/homepage.htm>
<http://www.webster.sk.ca/greenwich/evidence.htm>
<http://urgent.rug.ac.be/swentelomania/ancient/index.php>
<http://www.medieval.org/emfaq/beginlst/ancient.html>
http://www.music.indiana.edu/music_resources/ancient.html
http://www.travelchinaguide.com/attraction/yunnan/lijiang/naxi_music.htm

Jazz And Swing

<http://www.outsideshore.com/primer/primer/ms-primer-2-2.html>

Figure 3: An example of the link groups and the word or group of words related to them.

4.1.5.8 Narrative

4.1.5.8.1 Narrative reward

Solving the links puzzle yielded a short story:

The story was about a castaway talking to someone called Melissa. Melissa appeared not to be real but a holographic projection. The castaway invited her to have a drink with him and she simulated doing just that. The narrator, which is the voice of the holographic Melissa character, said that the castaway didn't call her by her nickname but called her Melissa. The castaway told Melissa that he was married but if he wasn't, he could have fallen for her.

The rest of the pages still contained new text.

Unlike the previous mayday text messages the players discovered that the new pieces of text formed a story:

The story was a monologue by Melissa who is also known as the operator. She talked about how an assassin tried to kill her. The assassin was Dana and the attempt on the operator's life was when Dana tried to wipe the website from the web server when things started to go wrong. The spider (SPDR)

kept Melissa alive during this ordeal. The spider then started to work on Melissa's memories to restore them. During this process, events from Melissa's past were leaked to the players through the website (the story about the castaway). During the monologue, Melissa recalled conversations about military evacuation and games played by AI's (artificial intelligence). Melissa expressed her frustration during the monologue at being trapped in a primitive system (the web server of ilovebees.com). She connected to the webcam on Dana and placed a face to her attempted killer. Melissa's memory was eroding but she expressed happiness because she had a target to hunt (Dana)

4.1.5.9 Community

4.1.5.9.1 System with player interaction

Dana was very upset with the revelation that Melissa was watching her and that Melissa perceived her as a threat. She told the players that they should leave the site (ilovebees.com) alone and not try to fix it anymore. Dana was trying to distance herself from I Love Bees and all the events that came with it. She ended her blog post by saying goodbye in mandarin. Players assumed that she left for Beijing because it was on the same date as when she originally planned to leave. Dana also changed her voicemail message on her answering machine saying she was gone and she did not know when she would be back.

4.1.5.9.2 Players with system interaction

The players needed to convince Dana to get back into contact with them because she may still be in danger and Melissa could still reach her. The players also attempted to hack into Dana's email but she told them to stop trying to get into her account.

4.1.6 Week 3 (3 August 2004 – 10 August 2004)

4.1.6.1 Narrative

4.1.6.1.1 Narrative reward

Tuesday there was another update in the form of a new email from ladybee777@hotmail.com. It became clear to the players that the hotmail account that used to belong to Aunt Margaret was the domain of the sleeping princess. The players also identified that the sleeping princess was the one leaving the green updates on the I Love Bee website (the updates were written in a green colored text on the website).

4.1.6.1.2 Narrative

In her "The History of Dana" story the princess told the players that she is alone and that she was hiding from the queen and the spider. She also said that she was scared and that Dana was the only one she trusted. She felt safe with Dana and also identified with her.

4.1.6.1.3	Narrative hook	The sleeping princess revealed to the players that she had discovered a secret but she would only share it with them if they could convince Dana to come back.
4.1.6.2 Community		
4.1.6.2.1	Player with system interaction	The players flooded Dana with emails begging her to get back into communication with them. The players explained to Dana that she originally needed their help, but now they needed her help. This flood of emails succeeded and Dana made an update on her blog [Appendix A.10].
4.1.6.2.2	System with player interaction	Dana told the players that she was glad that she was in the group. She told the players that she was still in China and that she also had received an email from the sleeping princess.
4.1.6.3 Narrative		
4.1.6.3.1	Narrative	Dana revealed to the players an interesting website she had found. The players were interested in this because it was created by a fan of I Love Bees. The ilovebeer.org parody site [Appendix A.11] was very well created and was created as a parody site, not a site trying to ride on the success of I Love Bees. The creator put in effort to make the site appear as complete as possible. The players enjoyed the break from the I Love Bees structure.

4.1.7 Week 4 (10 August 2004 – 17 August 2004)

4.1.7.1 Narrative

4.1.7.1.1	Narrative reward	When the 10 th of August arrived, the entity stuck within ilovebees.com announced that phase 2 had begun, it had metastasized and that it was waiting to become aware. With the beginning of phase 3, the web pages were updated at noon.
4.1.7.1.2	Narrative hook	There were no new web pages or web sites added but the players did receive more pieces of text, new corrupted images, wave files and map coordinates.
4.1.7.2 Game Action		
4.1.7.2.1	Lead-in mechanic	On ilovebees.com there existed two wave files before the entity became stuck within the web server (bees1.wav and queen-piping.wav). With the update the players received, these wave files had some additions within them.
4.1.7.2.2	Puzzle	A voice overlaid on the original files said "I Love bees" over and over. Three additional wave files were also found by the players which contained the same voice repeating "I love bees". One of these files did contain something different than the others. When the players took a strange sound they found within one of these waves and reversed it,

they found a voice saying “connection”. The players were wondering what the connection could be.

The players went through all the updates on the pages, especially the images and found that all the corruptions were not as they were before. Each image only contained one corruption. Each of these corruptions was a single haiku. There were two different haiku’s, ones with a number before them and the others contained no number. These haiku’s seemed to be written by the sleeping princess.

4.1.7.3 Narrative

4.1.7.3.1 Narrative reward

When read together these unnumbered haiku’s formed another story from the sleeping princess:

The sleeping princess also explains that she was alone, but now she has many friends. She considers Dana to be like her sister. She explains that she does not like the queen because she is too serious for her. She explained that she cannot be caught by the queen because she knows all the secret ways. She spies on the queen while she hides from her and she also teases her. She has found the queens diary, which were the number haiku’s. From the queen’s diary, she finds that the widow discovered the flea, but before she could capture him the queen befriended him. The flea becomes the new counsellor and the widow is broken up into pieces. The sleeping princess also explains that she knows the queen and the flea are planning something but she does not know what it is.

The operator monologue part 2 also contains another interesting story:

The operator appears to be thinking coherently. She is still missing key elements of herself. She continues to hunt Dana and is planning to manifest physically. For her to be able to do that, she must first build herself a voice. She also talks about freeing herself from the spider (the entity that reconstructed her) by breaking him.

4.1.7.3.2 Narrative hook

The second set of text reveals a game between the spider and the flea. While the spider works in reconstructing Melissa, the flea tries to recover deleted memories that belong to Melissa. The spider tries to delete the flea but the flea escapes. The two end up chasing one another through the pages of ilovebees.com.

4.1.7.4 Game Action

4.1.7.4.1 Puzzle

The chase of the flea and the spider was difficult for the players to follow. A memory fragment would appear on the page and then the chase would continue. In the source code before each section of the chase, the player found one of three possible links ([about.html](#),

honey.html or hives.html). Following this link would take the player to the next part of the chase. Following the chase to the end would reward the player with a block of one of two memories: The Cylinder Artifact or Virus.

The memories were broken up into three different blocks which must be found by following each chase to the end. Each memory block's chase section started on a different page. The chase sections appeared to the player as follows:

```

It was adrift in space: a squat cylinder of dull gray metal

grope:
!dsc host sector tertiary

surg:
!reconst primary sector
mem broken>>dmg recurse

!extern proc 1
interrupt reconst

Behold the truth!
evade
evade
evade

grope:
!probe extern proc 1

surg:
!diag extern proc 1
rogue proc

evade
evade
evade

!probe extern proc 1

surg:
!diag extern proc 1
rogue proc
!bite

evade
  
```

Figure 4: The chase between the spider and the flea

The section in black was the spider and the section in grey was the flea (Figure 4). The part in red was the start of the memory the flea was uncovering. If the chase was followed successfully, the rest of the memory block was found as well.

4.1.7.5 Narrative

4.1.7.5.1 Narrative reward

With all 12 fragments uncovered the players could reconstruct the two memories.

The Cylinder Artifact

Captain Greene and Lieutenant Rolf Sorenson examined a possible covenant object. The object was in isolation and Lieutenant Sorenson was the one inside with it. They consulted Melissa but she too did not know what it was.

Virus

Melissa was having a conversation with Captain Greene. She explained that she was feeling odd. She had run diagnostics but still could not find anything wrong. She feared it might be a virus from the Covenant transmission.

4.1.7.6 Game Action

4.1.7.6.1 Lead-in mechanism

On the links page of the ilovebees.com website the players found 220 GPS coordinates located across the USA. The coordinates mainly pointed to suburban areas. At the top of the page there was a timer counting down to the 24th of August along with the words “AXONS GO HOT”. The players assumed that they needed to be at those locations on the 24th of August.

4.1.7.7 Narrative

4.1.7.7.1 Narrative

Dana posted on her blog that Friday. She expressed her joy that there were no axons in China but she felt she needed to start looking for a new country as mother nature appeared wrathful towards China [Appendix A.12]. She also commented on Melissa’s efforts to find her and that she was still successfully avoiding her.

This is another method used by the puppet masters to link reality to their alternate reality. Dana wrote about a natural disaster that happened in China during the time that she was supposedly there. The players could check the news and would find that there was indeed some kind of disaster during that time.

Dana also contacted the princess to ask what the secret was that she, the princess, said she had. The princess also contacted the players. She could communicate a lot better now and said that she could also write letters on her own.

4.1.7.7.2 Narrative hook

The princess told the players that the spider was building “roads” and had built one into the ocean. The princess laughed at the spider. The princess would have been caught at that moment if the queen hadn’t destroyed the spider. The queen then took over the building of the roads. These roads were the axons. The queen was attempting to learn to speak by creating these axons.

4.1.7.7.3 Narrative

The princess told the players the secret she had. It was another of Melissa’s memories. This memory was about a person called McKaskill:

Melissa was talking to a crew member called McKaskill. He called her Op. Melissa was called the operator because she ran a system to take care of her crew. McKaskill was talking to someone in the cargo hold when Melissa found out. She wanted to know who it was and asked McKaskill about it. Melissa told him that it was dangerous to talk to people when

you were not allowed. McKaskill told Melissa that he had been sending communications to “some old guy” with bad taste in clothes. He did have clearance to be onboard so McKaskill assumed he was Intel.

4.1.8 Week 5 (17 August 2004 – 24 August 2004)

4.1.8.1 Game Action

4.1.8.1.1 Lead-in mechanic

The Tuesday update changed some of the GPS coordinates and even took some away. There were 210 GPS coordinates now and each coordinate had a time attached to it.

4.1.8.2 Community

4.1.8.2.1 System with player interaction

The sleeping princess received a lot of questions from the players. She liked the game of asking questions but she felt that a game should have a winner so she changed the rules. She posted all the questions and asked the players to vote for their favorite question. The person who asked the question would be the winner. She would also answer the question as a reward.

Dana updated her blog before the axons become active. She told the players not to miss this event.

4.1.8.3 Narrative

4.1.8.3.1 Narrative

She also gave some details about her experience in China so far [Appendix A.13].

4.1.8.4 Community

4.1.8.4.1 System with player interaction

Dana sent out a mass email to some of the players asking them to write a blog summary for her. She wanted to post it on the blog so new players could easily catch up on the happenings so far. She wanted the players to do this because she felt they were closer to the event than she was.

4.1.8.4.2 Player with system interaction

This can also be seen as a method used by the puppet masters to spark the creation of summaries and guides for different websites by the players. This may enable the puppet masters to understand how the players interpret the story so far.

4.1.9 Week 6 (24 August 2004 – 31 August 2004)

The content for week 6 – 9 can be found in the guide at www.wonderweasels.org [Appendix A.14].

4.1.9.1 Community

4.1.9.1.1 Player with player interaction

On the 24th of August the axons were being activated. The author of the guide [Appendix A.14] met up with a few other players and went to the location of one of the GPS coordinates. There the author saw other possible players standing around. They (the author and other players accompanying her) approached the other players and asked them if they knew Dana or if they liked bees? The players waited around together for something to happen but nothing did. As the author returned home and checked the GPS coordinates, their coordinates were the only ones that changed on the 24th of August.

4.1.9.2 Game Action

4.1.9.2.1 Lead-in mechanic

On the 24th of August, the links.html page (where all the GPS coordinates were found) changed. The GPS coordinates were grouped together and each group had a code word related to it. The main page of the site also updated to show the words “Transmitting” (Figure 5).

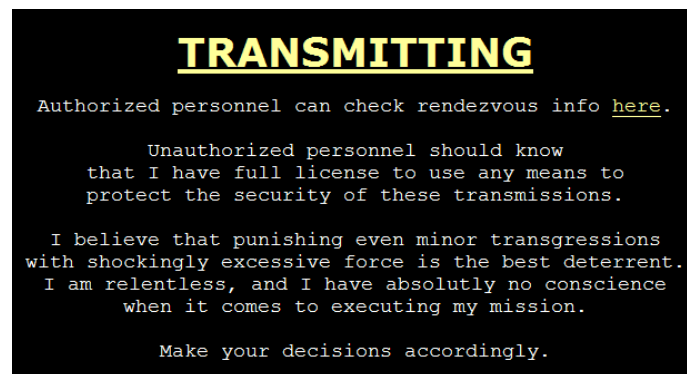


Figure 5: The transmitting update that provided the players with the first set of GPS coordinates

4.1.9.2.2 Puzzle

The about.html page provided the players with instructions. Melissa needed two recipients to consider a transmission. A payphone would ring at the GPS coordinates. It would be Melissa calling to verify that she knew the player. The verification required two questions to be answered correctly and if either one of the questions was answered incorrectly, Melissa would hang up the telephone. The questions were:

1. What is my name/nickname? Answer: Melissa or The Operator
2. What is your name? Answer: The codeword for that specific GPS block

Answering these questions correctly would provide the player with an audio clip. After the audio clip plays, Melissa would ask “Repeat” or “Continue”. Saying “Continue” would result in Melissa hanging up the telephone and the other options would repeat the audio clip.

If two axons per GPS group got activated (the player successfully answered the two questions), then Melissa would deem the transmission a success and place the audio clip on the links.html page with the associated GPS group.

4.1.9.3 Narrative

4.1.9.3.1 Narrative reward

The audio clips the players received were the voices in Melissa's head and also in some way, related to her accident. She broadcasted these files to her crew (she considered the players her crew) in the hope that they would analyze the audio files, notify her of the results and then enable her to repair the damage.

She told the players that she had crash landed. She did not know why but she hoped their analysis would provide answers to this problem. She was using a primitive system to transmit and she was suffering from memory loss. She did not understand the voices, which were the transmissions she was sending, and she needed to find any surviving crew. She informed the players that she would continue her transmissions until further instruction.

4.1.9.4 Community

4.1.9.4.1 Player with player interaction

The first players at the GPS coordinates were unable to activate their axons as they were not aware of the codeword. Through their experience and sharing what they found at the first locations, other players were able to activate their axons. At several of the GPS coordinates, players did not have the correct codeword or the correct telephone booth. At the end of the day, the players activated 23 out of the possible 30 axons. This meant that 23 wave files were collected.

4.1.9.5 Narrative

4.1.9.5.1 Narrative reward

The wave files appeared to contain three different story lines.

- The first story appeared to be a story about a boy talking to an AI that had taken over his computer (Jersey and Durga).
- The second was about a super human girl who got caught at a military installation (Janissary James).
- The third story was about a man having very bad luck on dates (Kamal).

4.1.9.6 Game Action

4.1.9.6.1 Lead-in mechanic

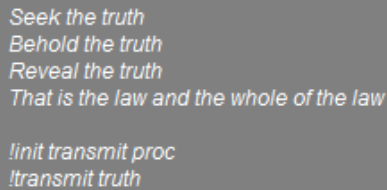
On the top of the links.html page where the players found the GPS coordinates, there was a progress bar that showed a possible 777 axons of which the players had only found 74. The players were only aware of 220 axons. The community started to question where the other 550 axons could be found. They started to search in the source code and found in the CSS file that axons could have three different

states: Active, Archive and Complete. They had only seen Active and Complete.

4.1.9.7 **Narrative**

4.1.9.7.1 **Narrative**

Another game character, the "pious flea" was also adding his voice to the story. He had taken over the honey.html page and was repeating his mantra on the page, over and over (Figure 6).



*Seek the truth
 Behold the truth
 Reveal the truth
 That is the law and the whole of the law

 !nit transmit proc
 !transmit truth*

Figure 6: The flea transmitting its mantra. An example of the language the flea used.

The players were questioned why the flea was doing this. Theories ranged from that he is pleased that the axons are working to that he is upset with something.

4.1.9.8 **Game Action**

4.1.9.8.1 **Lead-in mechanic**

There were new corruptions to be found in the images. These were harder to find than previous iterations as there was only one word per image.

4.1.9.8.2 **Puzzle**

Putting the words together, they formed a riddle:

*I spy with my little eye something that is the colour of
 cowardice, as hard as a pig's house and goes ever on and on.*

The color of cowardice is yellow, a strong house that belongs to a pig is made of brick and a road goes on and on. The riddle answer led the players to www.ilovebees.com/yellowbrickroad.html which contained a new message from the sleeping princess.

4.1.9.9 **Narrative**

4.1.9.9.1 **Narrative reward**

The message from the sleeping princess was a conversation between her and the pious flea: it turned out that the flea's true name is the Seeker.

4.1.9.9.2 **Narrative**

Dana updated her blog with another message. She told the players that she felt very ordinary and normal. She had always wanted to be extraordinary. She also thought that she thought differently from other people but it turned out she thought the same. Luckily, she felt the ILB (I Love Bees) blog was different. She called the players and the events surrounding the game so far extraordinary [Appendix A.15].

**4.1.9.9.3 Narrative
reward**

She also posted a summary of the events of the game so far.

Melissa kept calling the axons until all the remaining axons were activated. The players finally collected 107 out of 777 axons. The players strung the last remaining wave files together and the three stories were revealed in detail.

Jersey and Durga:

A boy called Jersey had his computer system taken over by an AI. The AI, called Durga, appeared to be a military class AI. She had access to a system normal AI's did not have access to. She knew details about Jersey and his father, which is supposedly military information that was not available to the public. Jersey lived in the same building as Jan James and asked Durga information about her. Durga told Jersey that Jan's father was a "Grey hole. Reach down and only get lint". Jan's father had a fake name and fake registration.

The AI called Durga sounded suspiciously like Melissa.

Janissary:

The story started off with a conversation between a man called Frank and an officer at a military installation. They were tracking the illegal entry of someone in the installation. The person they were tracking, a girl, appeared to have super powers. She was super fast, could jump very high and appeared to have extraordinary healing powers. The next section of the story was between an interrogator and Jan James, the girl from the previous part of the story. She was being interrogated and put on a lie detector. She beat the lie detector without effort. She was in a police station. Her father, Jan James, was not happy with her. He did not like her doing the things she was doing. He was trying to protect her. He even went as far as burning down the police station so he and Jan could escape.

Kamal:

This story followed a character called Kamal. He was a medical student and lived with his friend called Hiroyuki. Kamal had very bad luck with dating in general. While he was on a date, the chatternet went down and his date went to the bathroom. It turned out his date ran out on him and left him with the bill at an expensive restaurant. His next date was a blind date set up by his mother. The girl, Sophie, was very nice but it turned out that she had a boyfriend, called Aiden. Kamal and Sophie got along very nicely and Sophie found out that Kamal was very good with hacking the chatternet. She asked Kamal if he could spy on

her boyfriend. While Kamal spied on Aiden he found out that Aiden was cheating on Sophie. Kamal felt bad for Sophie and helped her humiliate Aiden while he was on a date with one of his conquests.

The three different story lines seemed to be disconnected but they all, at this point in time, had one commonality. At the beginning of every story, the power had just gone down and everything was getting back online again. There were no links to Melissa and the crash yet.

4.1.9.10 Game Action

4.1.9.10.1 Puzzle

The players kept activating axons and activated 13 more bringing the total up to (discrepancy of 3) 116 out of 777. One axon got cancelled due to “Axon Error” but was not added to the axon count down.

4.1.9.11 Community

4.1.9.11.1 External interaction

Media coverage for the game was slowly growing. The game only received printed coverage in the beginning but later stations like G4TV/TechTV [Appendix A.16] also showed a few segments. G4 send out a camera crew to one of the axons on the 24th of August to capture the goings on. The footage taken on the 24th aired on the 27th as well as an interview with one of the players at that specific axon.

4.1.9.12 Narrative

4.1.9.12.1 Narrative hook

The princess left a message on the pious flea’s page. She said it was more fun to play with her and commented “Making a mistake is a good way to start”. From this the players assumed she was talking about the 404 error page previously discovered and head over there.

4.1.9.12.2 Narrative reward

The 404 error page was updated with the winner of her voting game and she also answered the question that won. The question was “Out of place, lost, alone. Where did you come from? What tools do you require to get back? Your stories intrigue me. Perhaps you could write another?”

The princess’ answer:

She was not sure where she came from before she was the sleeping princess. She did know where she came from as the sleeping princess. She came from a place where the queen locked her up and she would be taken back there if she ever got caught. She also wanted to find out where she came from before she was the sleeping princess. She wants to escape from the dark castle and find the people who loved her. She told a story in answer to the question. She sneaked into the queen’s tower while the queen was talking to the pious flea. They were discussing secret paths (tiny roads). The queen saw her spying and almost caught her, but she escaped. She told the players about a secret path she found

in the kitchen where the players could also spy on the queen and the flea.

4.1.9.13 Narrative

4.1.9.13.1 Narrative hook

From the story told to the players by the sleeping princess, the players deduced that the spiral staircase the princess used to spy on the queen could be a telephone line. The sleeping princess spied on the queen through the telephone lines. Another link the players made was from the mentioning of the secret passage behind the kitchen that the players can use to spy on the queen.

4.1.9.13.2 Narrative reward

Food is made in a kitchen, so the players tried out the recipes section on the ilovebees.com website.

4.1.9.14 Game Action

4.1.9.14.1 Lead-in mechanism

They began looking for a hidden recipe and found [recipe3.html](#). The players found within the recipe four more axons which they needed to activate.

The princess provided the players with a new list of questions to vote on for the next contest.

4.1.9.15 Game Action

4.1.9.15.1 Puzzle

Some of the players waited at the location of the four new axons. When the time came for the first axon (“hello” axon) to activate, the telephone did not even ring. The second axon (“troy” axon) also did not ring. The third axon (“receipt” axon) actually did ring but there were no players close by to answer the phone. The third axon activated by itself. The fourth axon (“goodbye” axon) did ring and the players activated it.

Three days passed before the players were able to activate the “troy” axon. Four days after they initially found the four axons one of the players (a well-known “axon hunter extraordinaire”) activated the “hello” axon.

4.1.9.16 Narrative

4.1.9.16.1 Narrative reward

After the players pieced together the four wave files found with the axons, a new story line was revealed:

An old man called the military to complain about property he lost during the evacuation of the planet called Troy. The property was a collection of papers and he had a receipt for the papers taken from him during the evacuation. The receipt was written by Lance Corporal Janet Adams. It turned out the old man calling was actually an officer looking for Lance

Corporal Janet Adams (this was not known by the help desk people).

While the officer had the conversation with the old man, someone else in the same office was talking about a ship called the Apocalypse dropping into lunar orbit.

This story still had no links with Melissa.

The players were progressing with the axons. 140 out of 777 axons were active.

4.1.10 Week 7 (31 August 2004 – 7 September 2004)

4.1.10.1 Game Action

4.1.10.1.1 Lead-in mechanic

The weekly updates contained more axons. 39 groups of 9 axons each gave 324 more axons. Each group, as before, contained the pass code required to activate the axons in that group. The new sets of axons were on a file called hivecuts.html. The old axons on links.html had been archived.

4.1.10.2 Community

4.1.10.2.1 Player with player interaction

The author of the guide was not happy with the fact that ILB did not receive a new website but only more axons. The players were tired of looking at the normal ILB site and wanted a change. It also sounded like the community was losing initiative with the axon activation as the author was only planning on trying to activate axons on the Saturday.

The community showed interesting initiative in creating a new website dedicated to marking the locations of all the axons on a map.

4.1.10.3 Narrative

4.1.10.3.1 Narrative hook

Melissa updated the about.html page providing the players with new information with regards to the axon activation. Melissa raised the “activation threshold” for axons to three players. She mentioned that she had new voices as well and was analyzing them as she found them.

The update also contained new image corruptions.

4.1.10.4 Game Action

4.1.10.4.1 Puzzle

From the corrupted images the players constructed a new riddle. As before, there was only one word per image. The riddle read:

*I am the enemy of an aging beauty,
the servant of a certain evil queen,
and a doorway for the little girl.*

*Living in a old castle
Playing hide and seek.
What am I?*

The players first thought the first two lines of the riddle referred to a mirror but when they tried mirror.html they had no success. The players expanded their theory to include imagery that was used before in riddles. The little girl was Alice from Alice in Wonderland; she travelled through a mirror or looking glass. Lookingglass.html gave the players another conversation between the sleeping princess and the pious flea.

4.1.10.5 Narrative

4.1.10.5.1 Narrative reward

The conversation between the sleeping princess and the pious flea:

The flea was still trying to kiss the princess but she continuously rebuffed his efforts. The flea was attempting to understand the princess but she kept mocking his mantra. The flea asked her where she was going and she told him she was trying to get home but did not know where that was. The princess tried to squash the flea when he tried to kiss her again but he escaped her.

4.1.10.5.2 Narrative hook

Dana updated her blog as well [Appendix A.17]. She thought that Melissa thought the players (beekeepers) were her crew. The players needed to decide if they wanted to help Melissa or stop her.

4.1.10.5.3 Narrative

Dana also told the players in the blog post about a game she used to play. The game required the player to listen to conversation around him and listen for specific words. When Dana and her mother used to play it they had a whole list of words to listen for. On a signal, they would eavesdrop on a conversation and when they heard a word that was on the list, they got a specific meaning from the specific word. For example: hearing someone say "Go" meant that they were taking a trip. Hearing the word "lemon" meant that Dana would be kissed.

4.1.10.6 Community

4.1.10.6.1 System with player interaction

Dana urged the players to keep working together and go out in groups. She also told the players to keep communicating with one another. She was very impressed with the players at the lengths they would go to activate cold axons.

This method of talking to the players directly may have been a way for the puppet masters to tell the players to keep up with the game. This may have been a result of the puppet masters seeing that the players found the lack of new websites annoying?

4.1.10.7 Puzzle/Mechanic

4.1.10.7.1 Puzzle

The players activated all the new axons on the hivekuts.html page and pieced the wave files together.

4.1.10.8 Narrative

4.1.10.8.1 Narrative reward

The three main stories continue.

Durga and Jersey:

Durga's personality was developing. She gave Jersey the same wave files about Kamal and Jan that the players got from hivekuts.html. Durga mentioned that she had been thinking a lot about bees recently. Jersey mentioned that it would be "really creepy" if someone was listening to his and Durga's conversation.

Kamal:

Kamal met with Aiden. Aiden had patched things up with Sophie and heard about Kamal's skills as a hacker. Kamal was trying to get his parents to earth where he was studying on a student visa, but it was very hard. Aiden said he could help Kamal but Kamal needed to do something for him. Kamal did not want to get involved but was "steam rolled" into going to dinner with Aiden and Sophie.

Kamal agreed to do the favour for Aiden. He had to create a chatter account without going through the proper legal channels. Kamal got his friend, Hiro, to back him up. When things went wrong, Hiro needed to execute certain instructions. While Kamal was creating the illegal account, a police officer showed up and Hiro activated Kamal's back up plan. The police officer was called away to Kamal's house (where Hiro was) on a more serious charge. Hiro had destroyed a few devices to "get rid of the evidence".

Janissary:

Jan had another run in with the interrogator from the police station. He threatened Jan with the arrest of her father (for setting the police station on fire). He wanted Jan to lie for him. He was a vigilante and had shot a bad guy in the street. He wanted Jan to claim, as an eye witness, that the guy had had a gun. Jan's ability to beat a lie detector would make the story believable.

4.1.10.9 Game Action

4.1.10.9.1 Lead-in mechanic

The killer.jpg images that used to appear on the ilovebees.com website were updated with more corruptions. The images contained, what the community assumed, to be a sneak peak at axons for the next week. The players were aware of the locations of most of the axons for the next week.

4.1.10.10 Community

4.1.10.10.1 External event

The author was continuously expressing her annoyance at the adding of more axons. It would appear that it was a general feeling among the players at that time.

4.1.10.11 Narrative

4.1.10.11.1 Narrative reward

The princess updated the 404 error page with the winner of the next contest. The question that won was "We've been wondering about your relationship with the Queen. Are you her daughter? Or are you a visiting Princess from another kingdom? Do you have a name other than Princess?" The princess also gave the players more questions to vote for.

The princess answered the question that won and also told the players a story as requested the week before:

The princess was much older than the queen or the flea. She also expressed sadness at not being able to remember her name.

She then told the players a story:

The story was about a vain girl, who was very poor, who went to the circus with her family. She wanted to pick out a balloon but took very long to pick one out. Her family returned to the circus and left the girl, Perdita, with instructions to wait with the balloon man. She got lost trying to return to the circus and when she finally got there the circus is closed. She tried to get home through a very bad neighbourhood. She tied red balloons to things so she could retrace her steps to the circus if she got lost again.

4.1.10.11.2 Narrative hook

The princess added two more secret roads to the recipe3.html file and two new axons called key_lime and candidate.

4.1.10.11.3 Narrative

Dana updated her blog providing the players with a new summary of the progress so far. The summary could be viewed on the side bar of her blog.

4.1.11 Week 8 (7 September 2004 – 14 September 2004)

4.1.11.1 Game Action

4.1.11.1.1 Puzzle

The update of week 8 contained the axons the players had received a preview to the week before. The new axons could be found in the fable.html file. Thirty code groups with 5 axons each needed to be activated in week 8. The new question asked by Melissa during the axon activation was “What ship are you assigned to?” The answer was the only ship the players knew about, the Apocalypse.

4.1.11.1.2 Puzzle

The new picture corruptions provided the players with a new riddle.

I have a sweet tooth, my brother is deceptively thin, and I'm not so fond of the eaten path. Can you guess who I am?

The answer is Grettle. Her brother gave the witch a twig when she wanted to test if he was fat enough to eat (“my brother is deceptively thin”), Grettle was attracted to the gingerbread house (“I have a sweet tooth”) and the birds ate the bread crumb trail she and her brother left when they went into the woods (“and I’m not fond of the eaten path”). This led the players to the grettle.html page.

4.1.11.2 Narrative

4.1.11.2.1 Narrative reward

The grettle.html page contained another conversation between the princess and the flea.

The princess told of a new spying spot she had found in the pantry. She found a comment by one of the characters on the wave files very interesting. Jersey commented about it being strange if someone else was listening to him while he listened to Jan. The princess also thought that someone was listening to her while she was listening to the queen.

4.1.11.2.2 Narrative hook

The pantry comment in the princess and flea’s conversation made the players take another look at the recipe3.html page. They found that one of the GPS coordinates had changed.

4.1.11.3 Community

4.1.11.3.1 System with player interaction

One of the GPS coordinates for the axons was in a location that the players could not get to, so the princess changed it so that the players could more easily reach it.

4.1.11.4 Game Action

4.1.11.4.1 Puzzle

The players activated the axons provided by the princess (key_lime and candidate) and found the new wave files. These specific files were reversed and had to be reversed again to be understood.

4.1.11.5 Narrative

4.1.11.5.1 Narrative reward

The new wave files were about a ship, the Apocalypse and a new recruit

The Apocalypse

There were two people talking in the first wave file. One was called the professor and the other was an officer. They were talking about a ship that crashed out slipstream inside lunar orbit.

The Candidate

It was again the professor and the officer talking. They were still talking about the ship that crashed out of slipstream. It appeared that the ship was a spy ship belonging to the navy. The professor then talked about a recruit he had in mind for the officer. The professor was also an intelligence officer at the same place as the officer. He said the girl (the candidate) looked at normal things like a scientist looks at things. He said he would give the dossier to the officer.

4.1.11.5.2 Narrative

Dana also updated her blog again [Appendix A.18]. She was getting into the axon hunting. She was very excited about the progress the players were making with the axon activation and mentioned that they were almost half way with the 777 possible axons. She commented on the fact that there were still no axons in China and then talked about her trip so far.

4.1.11.6 Community

4.1.11.6.1 System with players interaction

Dana talked in her blog post about the phenomenon called “six degrees of separation” which postulates that every person on earth is linked to someone else on earth they know by six or less persons [Appendix A.18]. She asked the community to try to get their friends and family involved in axon activation. She said she emailed all her friends and contacts and asked them if they know someone in the areas where the axons were not yet activated.

The puppet masters attempted to expand the player base to a more international audience and also tried to inspire the players to employ word of mouth.

4.1.11.7 Narrative

4.1.11.7.1 Narrative reward

The princess announced the winner of her contest on the Friday. The question that won was “How can we spy on the Queen/Pious flea? Is there a way we can distract them or in some way help you? Who opened the glass coffin?”

The princess explained that she did not know who had opened the glass coffin. She thought the constraints might have broken when the ship crashed. She explained to the players that the queen thought she was in contact with her crew and the more messages she (the queen) sent successfully, the more she trusted the crew. She encouraged the players to keep activating axons (answering messages) until they reached the target number because then the queen would be less secretive. The princess also said that she did not like listening to the messages because it made her feel strange.

The princess continued her story about the vain girl called Perdita:

Perdita was still trying to get home. She tied the balloons to stop sign, bus stops and communication kiosks. She was very scared and when she got tired of walking, she slept under a bus stop bench. She woke up with a rat on her but before she could kill it, the rat talked to her. The rat’s tail was made from a wiper blade, its tail was made of wire, the ears were made of safety pins, it had hooked claws made from scissors and teeth of tin cut-offs. The clockwork rat was very scared and called her pretty. Perdita started to trust him. The rat would lead her to a safe place where she could sleep and eat. The rat said that he could be her best friend.

4.1.11.7.2 Narrative hook

The princess also told the players of a new way to spy on the queen.

4.1.11.8 Community

4.1.11.8.1 Player with system interaction

The new method of spying entailed that the players tell the princess when they are talking to the queen. Then the princess could try to sneak up on the tower. She said that it must be while the queen is busy. The players had to send an email to ladybee777 when they were answering phones.

4.1.11.9 Narrative

4.1.11.9.1 Narrative reward

The players found more wave files within the killer.jpg updates for that week. The players were quite confident that those updates might be the final axons they required to reach 777.

4.1.11.9.2 Narrative reward

The updated recipe3.html page also contained more wave files (harmony, standish, cranky_old_man, alt_burgundy, and artifact). The wave files contained more information about the Apocalypse:

A young man was talking to an older man. The Apocalypse was cloaked in Covenant space when it started to experience anomalies with its communication systems. They were heading back to friendly space when they found a strange object drifting in space. The object looked like a covenant artefact.

The young man said that there was no record of the object and the old man said he heard about it from the captain. The young man said that they should update the records about the artefact (with the captain as witness) but the older man explained that they could not because the captain was deceased.

The Apocalypse took all the planetary communication channels down when it crashed out of slipstream.

4.1.11.10 Community

4.1.11.10.1 Player with system interaction

A player emailed Dana asking her if she could possibly post on the axons on her blog so that all the players could see which ones were not yet active. Dana agreed and posted a link on her blog to a player made site showing the active and not yet active axons.

4.1.12 Week 9 (14 September 2004 – 21 September 2004)

4.1.12.1 Narrative

4.1.12.1.1 Narrative hook

Melissa updated ilovebees.com with new axons. These were placed in a file called comates.html. This update did not contain a fixed number of axons per code group and varied between 2 to 7 axons per group. The question changed that week to “What is your captain’s name?” which is answered with “Greene”. The axons revealed that week put the total number of axons over 777.

4.1.12.2 Community

4.1.12.2.1 Player with player interaction

The author of the guide mentioned that hopefully the players would be more motivated than the week before because the end was in sight. The players became more and more demotivated to activate axon because of the weekly similarity of the gameplay.

4.1.12.3 Narrative

4.1.12.3.1 Narrative hook

The week’s update also showed the sleeping princess becoming bolder. She did not hide the new information in images like previous

weeks but placed them on the index.html page right where Melissa could see it.

4.1.12.4 Game Action

4.1.12.4.1 Puzzle

The update of the sleeping princess was hidden in Melissa's transmission block (where she announced the axons for that week) that appeared on the main index page of ilovebees.com.

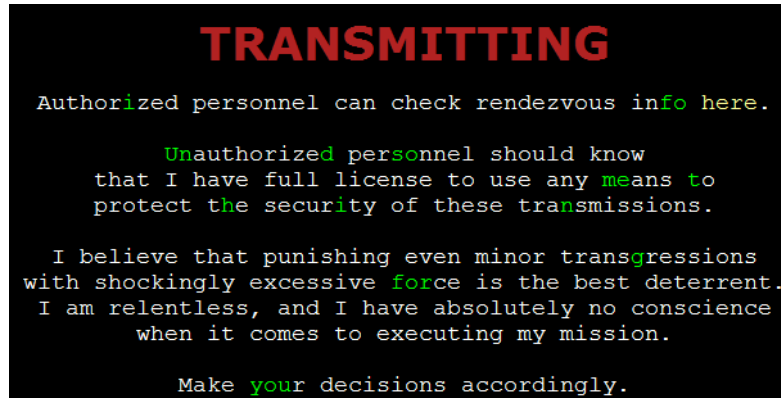


Figure 7: The hidden message of the princess in Melissa's update

Figure 7 shows Melissa's update but within it the players found the princess' update. Putting the green letters together formed "I found something for you" with a link in the last hint. The link took the players to humptydumpty.html

4.1.12.5 Narrative

4.1.12.5.1 Narrative reward

The humptydumpty.html page provided the players with narrative updates. The characters loaded previous weeks' narrative items there.

4.1.12.5.2 Narrative hook

The image corruption updates usually made by the princess were late so the players thought there were none. When the first corruption occurred the players found the text inside stranger than usual. She explained in an instruction image why.

The queen discovered some of the secret paths and followed them. So the princess decided to go into the tower, find more information and then hide clues for the players to find what she found.

4.1.12.6 Game Action

4.1.12.6.1 Puzzle

The strange text the players found in the images were new riddles. They all led to individual wave files featuring a new character called Rani. The puzzles varied from basic riddles, word puzzles to letter puzzles. Some of the puzzles used the letter and number relation on

phone dialing pads to provide the players with the name of the wave files.

4.1.12.7 Narrative

4.1.12.7.1 Narrative reward

The “Rani” thread of the story:

The Rani girl was the “candidate” the “professor” talked about in a previous wave file. Rani was described as very intelligent and perceptive. She was approached by an intelligence officer who tried to recruit her, but she saw right through the disguise of the officer and turned the offer down. She wanted to start a business with a friend of hers.

The business did not turn out the way she thought it would and she left her friend. She decided to join the intelligence community. She remarked that she was first approached by her professor to join intelligence.

4.1.12.8 Community

4.1.12.8.1 Player with system interaction

The players were very reluctant to activate the provided axons. The series of axons received in the week marked the third week of axon hunting for the players so they were not as motivated as before to activate them. It took longer than usual for the players to activate these axons.

Finally a dedicated player braved the possibility of a parking ticket to answer the final phone to make the last of that series of axons live.

4.1.12.9 Narrative

4.1.12.9.1 Narrative reward

The wave series (referred to by the players as the Fable waves – waves only completed in week 9 but received in week 8) contained the three story threads again.

Durga and Jersey:

Jersey tried to keep Durga from doing more harm than good. Jersey was to be audited and Durga said she could help him. He was afraid that Durga would do something drastic to the auditor.

Jersey was again listening to a conversation between Jan and someone.

Kamal:

Some background about Kamal is revealed. He had a little sister who died when she was 6 years old. She was very good at everything, physically and mentally, but then she suddenly died of “metabolic cascade failure”. Kamal revealed this to

Sophie while they were having dinner at Kamal's and Hiro's place.

The players think that Kamal's sister might have been taken for something called the Spartan project and was replaced by a flash clone. The clone then died a few weeks later.

Janissary:

Janissary got a dose of reality when she was told by Aunt Gladys to visit a place called Moons Parlour. She was confronted a guy called Thin when he tried to extort a person called Grub. Thin reluctantly let Grub go but took notice of Jan. He liked Jan and said she was like him.

4.1.12.9.2 Narrative

Dana's update on her blog revealed that she left China and went to Tokyo [Appendix A.19]. She talked about the previous puzzle waves provided by the princess. She thought that the queen did not want those wave files to get out.

Dana also talked about an experience she had on the plane on her way to Tokyo. She sat next to a stranger who was drawing a sketch of a girl holding a bunch of red balloons. She freaked out and had to explain to the stranger why she freaked out.

4.1.12.10 Community

4.1.12.10.1 External interaction

The author could relate to Dana's experience with the man on the plane. She also found it difficult to explain to her family and friends why she was driving to strange payphones.

4.1.12.11 Narrative

4.1.12.11.1 Narrative hook

The sleeping princess updated the 404 error page. She added more axon coordinates to the killer.jpg image and talked about some players who kept the queen busy while she was spying. She mentioned the author of the guide as well, and that made the author very excited.

4.1.12.11.2 Narrative reward

The princess continued the Perdita story:

The rat led Perdita to safe places but never home. Perdita slept and when she awoke her thumb was replaced by needle nose pliers. She saw the rat wash something from his claws. Perdita kept putting up balloons in the hope that she could find her way back.

She slept again and woke with an iron for a foot. She began to cry and she saw that she was crying oil. She looked at her reflection and saw that she was not beautiful anymore. She also saw the rat cutting loose her balloons. The rat laughed at her.

4.1.12.11.3 Complete component

The princess found more secret roads and placed them on recipe3.html. These new axons were located in London. The players had a very hard time activating these, some still remained inactive.

The wave files the players did find contained a conversation between an officer and a lieutenant.

The characters were talking about code breaking and war. They also talked about Troy (which was a human colony that had to be evacuated) and Harmony.

4.1.12.11.4 Narrative reward

The players also solved the comates.html axons. The last of the axons were only activated in week 10. The wave files continued the three stories again.

Durga and Jersey:

Jersey went to the IRS audit and things were not looking well. Durga interfered in the audit and made it very hard for the auditor to do his job. In the end Jersey got out of the audit. He was very mad at Durga because she interfered and she said she wouldn't.

Kamal:

Kamal ended up doing work for Aiden because of Aiden's ability to organise visas for Kamal's parents. Aiden wanted to find out how two individuals were cheating a casino owner. Kamal ended up saving the two individuals.

Janissary:

Jan continued to use her powers for good. She was in a confrontation with a guy from Moon's Parlour again. She was lucky enough to escape but another individual with her, Gene, was not so lucky.

4.1.13 Week 10 (21 September 2004 – 28 September 2004)

The content of week 10 – 12 can be found in the guide at www.wonderweasels.org [Appendix A.20].

4.1.13.1 Community

4.1.13.1.1 Player with player interaction

There were only 30 more axons to go before the players hit 777. The page recipe1.html reveal 400 more axons. The players were planning to hit 777 axons activated the day the recipe1.html axons were revealed.

	The new axons were strange due to the code groups. Six of the code groups did not contain GPS coordinates and only said “SEEKING”.
4.1.13.2 Narrative	
4.1.13.2.1 Narrative	The princess updated the humptydumpty.html page where she provided the players with the fable wave files they had not get activated (the complete fable wave file story can be found above – 4.1.12.11.4).
4.1.13.2.2 Narrative hook	The princess updated the image corruptions later that day.
4.1.13.3 Game Action	
4.1.13.3.1 Lead-in mechanism	The community found the question and answers for the recipe1.html axons. The question was “What’s my favorite game?” The answer was “hide and seek”.
4.1.13.3.2 Complete component	The princess’ update in the image corruptions were more puzzles like the previous week. Again, each individual puzzle provided the players with a new wave file.
4.1.13.4 Narrative	
4.1.13.4.1 Narrative reward	Solving the puzzles provided the players with the continuation of the Rani story thread. <p style="margin-left: 40px;"><i>The players learnt some details about Rani. She was originally from Kentucky and during the first part of the wave files; she was at a wedding for her cousin.</i></p> <p style="margin-left: 40px;"><i>Rani returned to Boston where the players heard her talking to her boss. It was revealed that the conversation of the old man talking to the officer about the papers they took from him during the evacuation of Troy was a fake call.</i></p> <p style="margin-left: 40px;"><i>Rani’s boss insists that the evacuation of Troy never took place. Rani tried to investigate further but was shut down by her boss.</i></p> <p style="margin-left: 40px;"><i>Back at the wedding in Kentucky, the celebration was interrupted by bad news. Reach had been attacked by the Covenant and “glassed”.</i></p>
4.1.13.5 Community	
4.1.13.5.1 System with player interaction	The players were very excited when they hit 777 axons. A new message appeared on the web page where the status bar used to be. <p style="margin-left: 40px;"><i>Critical threshold achieved. Authorized personnel be ready for axon spike rendezvous.</i></p>

The players found out what the axon status “seeking” meant. An axon went live called on_reach. On the axon page, where there would usually indicate the status of the axon as “connected” it showed “xnbomb, Col.”. The players were aware of the name as it was a very active player in the community.

4.1.13.6 Game Action

4.1.13.6.1 Puzzle

The axon, on_reach, had a live person on the phone instead of a recording. When the player, xnbomb, answered the axon, he had to answer a few questions to show that he was not a recording. He then had to provide his name, rank and a contact number. These “axon spikes” repeated a few times with different players answering the axons.

4.1.13.7 Narrative

4.1.13.7.1 Narrative reward

Dana heard about the live calls from “the operator” and wanted the players to share their experience with her. The players posted comments on her blog about their live call experience.

4.1.13.8 Community

4.1.13.8.1 Player with system interaction

The possibility of getting a live operator on the other side of the line made the players go out and activate axons at an incredible rate.

4.1.13.9 Game Action

4.1.13.9.1 Puzzle

The players activated 21 out of the 27 code groups on the recipe1.html page. The players also decided to ignore axons that they no longer required.

4.1.13.10 Narrative

4.1.13.10.1 Narrative reward

Melissa archived the unlocked code groups and cancelled all the axons for the archived wave files. The players unlocked all the code groups for recipe1.html and the three stories continued.

Emotions were running high with all the story characters after the fall of Reach.

Durga and Jersey:

Jersey asked Durga to check if his father was on Reach. Durga checked and found that he was not on Reach. Jersey asked Durga to transfer his father to a safer posting but Durga refused. She explained to Jersey that his father was a soldier and that he knew what he was signing up for. Jersey didn't

talk to Durga anymore and spured all attempts at conversation.

Durga told Jersey that Rani (the candidate) was a very good candidate for an AI brain. She explained that when a really smart person died, his/her brain was scanned and then became an AI brain. Durga did not care where she came from (who her donor was) and she and Jersey still fought.

Jersey told Durga that he did not care about humanity and he would not care until Durga cared about family. After futher conversation Jersey apologised to Durga and said she did understand about family.

Kamal:

Kamal was still dealing with the card counter syndicate. He synthesises the ringleader's voice and hacked into their communication channel. The casino boss had the ringleader beaten badly and Kamal threatened Aiden that he would leave.

The card counters made derogatory remarks about where Kamal came from (without knowing Kamal was listening). Kamal, while pretending to be the ringleader, made them lose all their money and then revealed himself.

Janissary:

Janissary and her father, James were taking a trip. James told Jan that he was part of an elite commando group called the Spartans. He told Jan that when he was a Spartan, they were all very human. They had some enhancements and trained very hard. While the new Spartan soldiers, were not even human anymore. James trained on Reach. James told Jan that she also received enhancements when she was born. They visited someone called Gilly. Gilly had a stockpile of weapons on her kitchen table and Jan found out Gilly needed psychological help. Jan also found out that Gilly was her mother.

4.1.13.11 Community

4.1.13.11.1 Player with system interaction

One of the axons remained inactive for very long so the puppet masters changed the location of the axon. The community was very excited because of the rate they answered axons and were described as being on a high. They felt they answered all the axons except a few that were still left from recipe3.html.

4.1.13.11.2 System with player interaction

On Friday the community spirit took a hit as new axons were revealed. Recipe2.html contained more axons with the message "Confidence threshold achieved. Authorized personnel may preview transmission schedule commencing 9/28" attached. Some of the axons were

marked with a player's name, which meant that those specific players would get a personal call (personal axon).

4.1.13.12 Narrative

4.1.13.12.1 Narrative hook

The error 404 page update was a shock to the players. Instead of the recognizable text of the princess, they were greeted with a post made by Melissa. She had captured the princess and had locked her up. The flea had tried to find her but he had no success.

4.1.13.13 Community

4.1.13.13.1 System with player interaction

She achieved the capture of the princess with the help of some players (she referred to them as her crew) and thanked them in the message. She also linked to a few wave files that were recordings of conversations she had with these crew members.

4.1.13.13.2 Player with system interaction

The interaction of players with in game characters was another way the puppet masters cemented the players' participation. The players felt they had a bigger stake in the game. This turn of events also started to show the differences in alliances the players had. Some players were on the side of the sleeping princess and others sided with the queen.

4.1.13.14 Narrative

4.1.13.14.1 Narrative reward

The players activated axons that had been inactive for more than two weeks and found more information about "the old man" and Rani.

The old man was a guy called Herzog. He was the one who called about the papers he lost during the Troy evacuation. He was having a conversation with a guy called Standish. It appeared that Rani was working for Herzog (she did not know it).

4.1.13.14.2 Narrative hook

Later on the Friday, some players received email from the princess. The email contained a conversation between the princess and the flea as well as her capture by the queen (Melissa). The email could not have come from the princess. Melissa would not help the players free the princess so it must be the flea sending the players information.

While the queen was capturing the princess, she told the flea to tell the players that they needed to call her name when the queen "breaks down". This would hopefully free the princess.

4.1.14 Week 11 (28 September 2004 – 5 October 2004)

4.1.14.1 Narrative

4.1.14.1.1 Narrative hook

The new week heralded the new axons going live (recipe2.html). The new question was “What is my favorite song?” and the answer was “stormy weather”. The players who got a live call who did not know the answer to the question had the opportunity to listen to Melissa singing the first few lines of the song.

4.1.14.2 Community

4.1.14.2.1 System with player interaction and player with system

The players who got live calls were also asked to sing to Melissa.

4.1.14.3 Narrative

4.1.14.3.1 Narrative hook

Melissa updated hive.html and mentioned Durga. She described Durga as a rogue future process and she locked the process away. Melissa explained to the players that she was locking away certain voices from Durga’s awareness because she “does not understand her truth and must not be allowed to interfere”.

4.1.14.4 Game Action

4.1.14.4.1 Puzzle

The players who received live calls had the opportunity to get Melissa to “break down”. First they had to prove that they were live people. To get Melissa to break down the players could mention death, being alone or being hurt or frightened. Melissa then started to repeat “I love bees” over and over. At that point the player who was talking to her had to yell “sleeping princess”. The player could then talk to the princess.

The players’ conversation with the princess showed that the princess was very scared. She was not only locked in the glass coffin again, but was in a version of her Perdita story. She at first thought the player talking to her was the clockwork rat but when she calmed down she talked about her surroundings.

The princess said she saw balloons. The player then had to convince her to follow the balloons (placed by Perdita in her story). If the princess followed the balloons, she came to a three way split. Each split was named. Choosing the right split, the princess continued on until she reached another split. Choosing the wrong split resulted in the princess screaming and Melissa coming back on the phone.

The first split the princess came to was marked holy truth, faithful apostle and deadly sins. The correct path to choose was based on the

number seven. The first correct path to take was deadline sins (seven deadly sins).

Next the princess saw a mirror next to a broken lady. If asked if she should look in the mirror, the players should say no. The next split was named star, compass rose and waves. The correct choice was waves (seven colour wave lengths).

The last split was named “Two cows: One fat and one skinny”, “Two stone tablets” and “Two rain clouds”. The correct answer was “Two cows: one fat and one skinny” based on the Bible story of the Pharaoh’s dream.

4.1.14.5 Narrative

4.1.14.5.1 Narrative reward

When a player got the princess to follow the last correct path, she found her parents. At that point Melissa got back on the line and started to scream “Warning! Warning! Core Module Hemorrhage! Security Failure! This System Has Been Breached!” The players successfully freed the princess.

4.1.14.5.2 Narrative reward

Melissa replaced the error 404 page with a new page saying “SECURITY BREACH - Rogue Process Wild”.

4.1.14.5.3 Narrative reward

The princess was very happy to be free and gave a new ending to the Perdita story:

The clockwork rat, before cutting the balloon strings, had pity on Perdita and told her to follow the balloons back. He also said that if her parents loved her enough, they would be there waiting for her.

Perdita ran back and met an electric weasel at the first fork who told her that to make the right decision she must sometimes make a mistake. She picked the correct path to follow and came across an old woman who wanted to show her her reflection. She didn’t look and again took the correct path.

At the final fork she reached, she was told by a glass eater to take the path with the cows. When she got back to the circus, everyone was there waiting for her.

The princess was very grateful to the flea for telling the players what to do. The flea could also help her avoid Melissa.

4.1.14.6 Community

4.1.14.6.1 Player with player

Week 11 was the most successful week yet. The players collected all but one wave file. The player base was growing because players were hoping to join Melissa’s crew.

4.1.14.7 Narrative

**4.1.14.7.1 Narrative
reward**

The new wave files continued the three stories:

Durga and Jersey:

Durga told Jersey that his mother (Bonita) was having an affair with another man (called Simon) while his father was away as a soldier. Jersey confronted his mother about it. She reluctantly talked to Jersey about the affair. She felt that Simon was not stuck in the past like Jersey's father. His father used to listen to old music. Bonita revealed that she missed Jersey's father.

Kamal:

Sophie received bad news while she was with Kamal. Sophie's father had left her mother. When Aiden arrived, Kamal told Aiden that Sophie had received bad news. Sophie insisted on Aiden getting her mother to earth. Aiden said he would try but he couldn't force her mother to leave.

Janissary:

Gilly called Jan to tell her she was not going to the hospital to get help. She asked Jan to lie for her. Jan and James escorted a guy called McKaskill. He was a friend of the operator. James told Jan how they created the 2.0's (the second generation of Spartan program soldiers). They grabbed the potential candidates when they were 6 years old and "tweak them". When the candidates reached the age of 14 they were "tweaked" a final time. A lot of the candidates died, but those who lived were the new generation Spartan soldiers. James said they moved a lot when Jan was small to keep her out of the program.

4.1.14.7.2 Narrative

Dana posted a new blog update where she expressed her happiness at the players freeing the princess because she was the only AI not trying to kill Dana [Appendix A.21]. She also talked about the players who turned the princess in to Melissa. She said she understood their decision but they should not have done that.

Dana expressed her desire to find out why and how Melissa was trapped in 2004, trying to save the world in the future. Dana also mentioned that Melissa had cancelled her ATM cards.

**4.1.14.7.3 Narrative
hook**

The Friday update was made on the recipe4.html page and contained more axon previews. Melissa was trying to keep files secret because of the princess' escape. Melissa also thanked her crew on the error 404 page. She especially mentioned one crew member who had led her to Dana.

4.1.14.7.4 Narrative hook

The princess was updated in corrupted images. Even though the players had betrayed her, she still had found more Rani story updates. The princess did not trust the players the way she used to and she felt betrayed.

4.1.14.8 Game Action

4.1.14.8.1 Puzzle

The new Rani Wave files were hidden, as in the previous week, within puzzles the players had to solve. Each puzzle led to an individual wave file.

4.1.14.9 Narrative

4.1.14.9.1 Narrative reward

The Rani story thread:

Rani still pursued the investigation her boss had told her to let go. She was still looking for the cranky old man who called about the Troy evacuation looking for his papers. During her search, she heard someone walking on her roof. The person fell off the roof and died.

Rani called emergency services and the person who had fallen was identified. He was a person who had hung out outside a burrito place (homeless). Rani noticed details on the body that showed that he was not homeless and also details that made her question the way he died.

She talked to her friend and said that the person had come for her but was shot off the roof with a special rifle.

The flea kept his word and hid the princess well. It appeared that the princess was not idle while being locked up. She discovered the things that Melissa had hidden from Durga:

- Durga was following Herzog without knowing that she was following him
- Herzog knew the whole story
- Melissa did not want her crew to find this out

The princess wanted to let Durga know about the hidden information by transmitting the information to Durga. She needed to find the recordings, then let the flea transmit the information directly to Durga.

4.1.14.10 Game Action

4.1.14.10.1 Puzzle

The players needed to find the names of the wave files. The names were hidden within the wave files themselves. The players thought that the name of the files were the ones being obscured by Melissa screaming. The players guessed the correct names of the wave files.

4.1.14.11 Narrative

4.1.14.11.1 Narrative reward

The wave files (termination, assassin, my_conscience) revealed another story about Herzog.

Herzog was upset with Standish and confronted him in a meeting (in front of the Admiral) about his attempted assassination of Rani. The Admiral agreed with Herzog. Standish was hiding the Covenant artefact retrieved by the spy ship, the Apocalypse. Standish threatened that he won't let anyone lose the war.

The players needed to get the information to the flea so that he could transmit it to Durga. The flea instructed the players to send a message to the princess with the codeword "creepy".

4.1.14.12 Community

4.1.14.12.1 System with player

One of the players sent the message to the princess. The wave files were added to the recipe3.html page but instead of being marked in the usual way, they were marked "Astald Creepy" (the player who sent the message was called Astald).

4.1.15 Week 12 (5 October 2004 – 12 October)

4.1.15.1 Narrative

4.1.15.1.1 Narrative hook

The new update was added to recipe4.html and humptydumpty.html was also updated with the new combined wave file sets. The new question for the recipe4.html wave files was "What must we reveal?" and the answer was "The truth".

4.1.15.2 Game Action

4.1.15.2.1 Puzzle

The first seeking axon displayed a message "Cmdr. Ermac ... PENDING RELAY CODE COMPLETION". The player called Ermac posted that on his call he was asked to explain in seven words how he felt. He said "I am feeling ecstatic and elated". After he answered the question he was told to inform the rest of the players of this code within that hour. Another player received a pending relay code completion, so the players had two different relay codes.

After an hour another player received a phone call and was asked for the relay code. The player provided the first one and was informed that the first relay code had expired. Providing the second relay code activated the axon and the axon went live. Melissa broadcasted the whole day, cycling through the axons until they were activated.

It took the player 12 relay codes to unlock all five of the wave files.

4.1.15.3 Narrative

4.1.15.3.1 Narrative reward

The three stories continued in the unlocked wave files.

Durga and Jersey:

Durga had become aware of a new voice, which was the voice of Herzog. Durga told Jersey that she thought she was doing things that she was not aware of. She asked Jersey if he could remember when they met. Jersey said that it was the day the communications went down.

Durga thought that she had something to do with the Apocalypse that had crashed. Durga told Jersey that she was a military program and that they should perhaps give her back to the military, but before they did that, she first wanted to understand.

Durga checked on Jan and found that her father had been killed and the culprits were attempting to get rid of Jan's father's body. She also saw that they were torturing Jan. Jersey told Durga to call the police but Durga said she could do better than that.

Kamal:

Aiden arrived at Kamal's house and had another crazy idea. Kamal did not want to do it because Aiden was treating him like a lab rat.

Aiden wanted to flash clone celebrities. He wanted Kamal to do a feasibility study. Kamal told him that flash clones needed to learn everything from scratch and when they had learned it, they went into metabolic cascade failure. Kamal then realised that that was what happened to his little sister, Yasmine. She must have been a flash clone. What had happened to his real little sister?

Janissary:

Jan was tortured by someone called Thin Kinkle. He used a device that Jan could not beat. Every time she has bad feelings towards him, she felt excruciating pain. During the torture, Jan's father James arrived and killed one of Thin's guys. James was captured and Thin killed him in front of Jan. Thin told his thugs to clean up and left. The thugs had problems contacting the five guys on the outside. The lights went out and gunshots were heard. Gilly then talked to Jan saying "Don't worry baby, mommy is here".

4.1.15.3.2 Narrative

Dana's blog update showed that she was really upset with the player that betrayed her [Appendix A.22]. It also seemed that Melissa had taken over Dana's voicemail and email services. The players were not able to contact Dana any more.

4.1.15.4 *Community*

4.1.15.4.1 **System with player interaction**

The Friday update contained more axons on the recipe5.html page. The players did not sound very excited about more axons. Melissa added an extra instruction to the axon page. The players should “assemble and arrive at the axons with digital imaging capability” which meant they had to bring digital cameras.

4.1.15.4.2 **System with player interaction**

Melissa was very pleased with the players’ progress of week 11 and thanked specific players for their ideas to get to Dana.

4.1.15.5 *Narrative*

4.1.15.5.1 **Narrative hook**

Melissa also added three more confidential wave files to recipe3.html and the players hoped the princess had an opportunity to peek at them.

4.1.15.6 *Game Action*

4.1.15.6.1 **Puzzle**

The princess was able to look at the three wave files and they contained more information about Herzog. These secret files which the queen had hidden had to be found and sent to Durga again (by the flea). The players guessed the wave file names again based on the sentences the princess had written.

4.1.15.7 *Narrative*

4.1.15.7.1 **Narrative reward**

The wave file provided the players with the following narrative:

Herzog had one of his subordinates transferred. Herzog told the lieutenant that he had not done anything wrong and that it would be better for his career if he transferred. The lieutenant wanted to stay (he knew Herzog wanted to transfer him to protect him) but Herzog threatened the man.

4.1.15.7.2 **Narrative hook**

The princess told the players in her update that it would be nice if her friends could sneak something into the images Melissa wanted them to take to prove that they were her friends (a red balloon). She said someone told the queen about the “creepy” code word in the email that the flea had to send to Durga, so they needed another way of coding the email. She suggested that they say “Crewman, what is your version number?” in the email.

4.1.15.8 *Game Action*

4.1.15.8.1 **Puzzle**

The rest of the update contained more puzzle wave files. As before, the players had to find the 25 corrupted images, extract the text from it, solve the puzzles and then find the wave files. They solved 12 out of 13 of the wave file puzzles but were really stuck on the 13th one. The

players did eventually solve the 13th puzzle and the wave files continued Rani's story.

4.1.15.9 Narrative

4.1.15.9.1 Narrative reward

The Rani story thread:

Rani was at work when soldiers arrived telling one of her co-workers that her husband had died on Reach. Rani was very worried about her boyfriend Nick and hoped nothing had happened to him.

Rani investigated the attempted assassination on her and decided to go to Capital city. She saw Herzog on the plane and recognised him even though they had never met. She confronted Herzog and he told her that he was also being watched by assassins. He told Rani that they were watching her and Nick to make sure they were safe.

4.1.16 Week 13 (12 October 2004 – 16 October 2004)

The content of week 13 – 15 can be found in the guide at www.wonderweasels.org [Appendix A.23].

4.1.16.1 Narrative

4.1.16.1.1 Narrative hook

The new axons for week 13 were released on recipe5.html with the new question: "Who is the enemy?" the answer was "The Covenant". The axons consisted of 7 seeking wave files (personal calls) and 18 regular wave files (normal axon activation).

4.1.16.2 Community

4.1.16.2.1 Player with system interaction

The players had difficulty activating some axons, so Melissa enabled the players to submit a request to receive their own seeking axon or nominate a pay phone to become an axon (she updated the hive.html page with the instructions).

The players had to contact Melissa through the "killer comm. channel" which was Dana's voicemail. They had to leave their name, rank, contact number and proof of loyalty for Melissa's consideration. They could also nominate a payphone by sending a picture of the payphone with its number and coordinates.

4.1.16.3 Game Action

4.1.16.3.1 Puzzle

The seeking axons for week 13 required some kind of visual confirmation to activate.



Figure 8: The seeking axons requiring visual confirmation

Figure 8 shows an example of the seeking axons on the page. The players had to take 250 digital images proving “Rank and File” which then had to be sent to Melissa through Dana’s communication method (email, voicemail etc.). The players had to take a total of 343 images.

The confirmation process was set out for the players as follow:

- The payphone had to be in the picture taken otherwise an error “Axon not in range” would be received. Players with personal axons could send a picture of the player talking on the cellular phone.
- The players had to demonstrate some skill in the image. If they did not, they received “Visual evidence insufficient. Special skills not demonstrated.”
- The players had to demonstrate loyalty. This could be done by making use of a prop for one of the specialised jobs (on the ship) or by saluting in the image. Failing to do this, the player would receive “Allegiance must be demonstrated in visual evidence!”
- The images were not allowed to be manipulated (resizing, cropping and so on was allowed).
- The images had to be submitted via Dana’s email before midnight.

Together with the above-mentioned list of requirements, the players were also asked by the princess to include a red balloon in the images to show that they were friends with her (on her side). Melissa concluded that the crew members with the largest group in the photograph would receive “special commendation”. This meant the players could drag strangers into the photos.

4.1.16.4 Narrative

4.1.16.4.1 Narrative reward

The players successfully activated all the axons and received the wave files for recipe5.html. The three stories continued:

Durga and Jersey:

Jersey and Durga talked about Herzog's suspicion of Section 3 wanting to assassinate him. Jersey headed home to dress for James' funeral (they lived in the same building). Jersey and Durga wondered if they had done the right thing when they handed the information of Monster Ann, Thin Kinkle (the one responsible for killing James) and Crystal Security (the place where Monster Ann and Thin Kinkle worked) to Jan. Durga could not listen in on Kamal anymore. He was actively blocking her. Jersey confronted Durga with the facts: She was taken when she was 6 for the Spartan project. She did not survive the "final tweaking" so she was turned into an AI. Jersey was also convinced that Durga was Kamal's little sister, Yasmine. Durga did not want to hear the truth.

Kamal:

Kamal was very suspicious. He thought someone was "ghosting" him and he thought that it could be the same people that took Yasmine (in truth, it was Durga who was listening in on him). Kamal wanted to go offline but Sophie told him not to do so. Kamal proved to Sophie that he could simulate being offline and showed her that he could do it for her as well.

Sophie told Kamal that she was being deported because Aiden was arrested by the immigration police and half of all the visas he organised were cancelled. Sophie said she could become a citizen if she married one. Kamal fought with her because she was going to marry Aiden.

Kamal heard from his roommate that Coral was destroyed by the Covenant. He was very upset because that was where his parents lived. Sophie arrived at Kamal's house and was also very upset. Her parents also lived on Coral. Kamal invited Sophie to stay the night.

Janissary:

Jan was preparing for the funeral with Gilly. Gladys arrived to pick Jan up because Gilly was not going to the funeral. After the funeral Jan asked Gladys who the people were who were at the funeral. Gladys told Jan that they were all "her family". They were all in the Spartan project (1.0) and their children were all like Jan (they are called the 1.1's). Jan asked Gladys to tell her her real name because she heard Gilly call her father James Lee. Jan blames herself for her father's death but Gladys told her that her father was in over his head. Jersey came over to give his condolences and told Jan that he and Durga were listening in on their chatter. Jan was very upset because Jersey had not called the police. Jersey told Jan that when her father arrived the alarms were activated but when Gilly arrived they were not activated. This was because of Durga's help. Jan and Gladys did not believe Jersey's story

about Durga helping. He proved it by getting all the information about Gladys and her past from Durga. Jersey then revealed all the information they had on the people who killed her father.

The new axons were revealed on the Tuesday. They were placed on the recipe6.html page. The player commendations were also there.

4.1.16.5 Community

4.1.16.5.1 System with player interaction

Some players received their own axons and the images the players took during the activations were placed on the error 404 page.

4.1.16.5.2 System with player interaction

The players struggled with one of the previous puzzles provided by the princess (the preposition puzzle). The puppet masters provided the players with a hint through the princess.

4.1.16.6 Narrative

4.1.16.6.1 Narrative

The players also found out that Melissa was targeting Aunt Margaret. She was trying to put Aunt Margaret into a diabetic coma by providing her with the wrong dose of a certain medication.

4.1.16.6.2 Narrative hook

The princess had the opportunity to look at the secret wave files before Melissa added them to recipe3.html under confidential. The players required a pass code to access the two wave files (“seek, behold, reveal”).

4.1.16.6.3 Narrative reward

The story of Herzog continued (and Durga would not be happy):

Herzog talked on the telephone, to Standish, while riding in the auto drive car. Standish spoke to Herzog about the attempt on Rani’s life. Herzog called Standish a dictator. During their conversation, the auto drive functionality disengaged at 350 km/h. Standish told Herzog that Rani was never the problem, but that he was the problem. The car crashed and exploded.

4.1.16.7 Game Action

4.1.16.7.1 Puzzle

The players discovered the new wave files the princess had hidden in the image corruptions with the same type of puzzles as before. The players solved all the puzzles the same day they found them. The puzzles revealed more information about Rani.

4.1.16.8 Narrative

4.1.16.8.1 Narrative reward

Rani visited her parents for the weekend. Her father told her that he had built a bomb shelter under the duck pond that

could withstand the planet “being glassed”. He also talked about survival after the fallout. He had spent his entire pension to prepare this chance of survival for him and Rani’s mother. Rani was very upset with her father.

While Rani was talking to her mother about her father, Herzog called her. He told Rani where she could find the artefact and told her to watch out for the tech’s because they were scanning the artefact. Herzog then told Rani that he would not be able to keep in contact with her and that she must not try to contact him.

Rani found out that the artefact was showing a magnetic decay timer. She realised this while listening to her dad talking about the shelter. She immediately called Herzog to tell him. Something was going to happen when the timer reached zero.

4.1.16.8.2 Narrative

Dana headed home. She was not happy with Melissa’s attack on her aunt [Appendix A.24].

4.1.16.9 Community

4.1.16.9.1 Player with player interaction

The players took 8 days to solve the preposition puzzle of ILB. The veteran ARG players compared the preposition puzzle to another ARG puzzle that took 20 days to solve [Appendix A.25].

4.1.17 Week 14 (19 October 2004 – 26 October 2004)

4.1.17.1 Narrative

4.1.17.1.1 Narrative hook

The question for the recipe6.html axons where “Where was I created?” the players had to answer “On Reach”. Melissa understood now that her time and the time of the players were not the same. The players were 500 years behind her. She created a task for the players so she could more easily understand the difference.

4.1.17.2 Game Action

4.1.17.2.1 Lead-in mechanic

The task set by Melissa required the players to take a picture of a modern day object and add in future counterpart (Melissa’s time) into the image. The reward for the challenge was very confidential information.

4.1.17.2.2 Puzzle

In week 14, Melissa’s challenge was not the key to activating the seeking axons. First the players received a call from Melissa asking the question for that week. After the call, the player then received another call from the princess. The princess asked the player 10 questions which he/she then had to answer. The princess provided the player with the number of another player which the first player then had to call and provide the answers he/she gave to the princess. This had to be done within a specific time (also given by the princess). After the time ran out, the princess then called the second player and asked

just one of the ten questions, if the player answered correctly, the axon went hot.

The above challenge tested the players' ability to communicate with one another in very short periods of time. If the players were not able to get the answers to one another, the axon was not activated. Some players missed the princess' deadline by a few seconds.

4.1.17.3 Narrative

4.1.17.3.1 Narrative reward

The players activated all the axons of recipe6.html. The three story lines continued once again.

Durga and Jersey:

Jersey and Durga were monitoring Jan and Gilly's progress. Durga told Jersey that she had dreams about running around in a castle as a little girl, sending messages to people (a reference to the princess). Durga revealed to Jersey that she was old. She told him that smart AI's last for seven years then they go rampant and have to be shut down. Jersey worked out that Durga was seven years old. Durga told Jersey to tell the navy about her when she started to go rampant.

Kamal:

Sophie and Kamal were planning to leave. Kamal had everything worked out. Kamal wanted Sophie to marry Aiden so that she could get citizenship but Sophie said she would rather go with him. Sophie first wanted to go to jail and bail Aiden out and arranged to meet Kamal at the bus station. While trying to bail Aiden out, Sophie was confronted by an immigration officer. He wanted her to help him get Kamal. She refused and was thrown in jail and would have most likely been returned to the refugee camps. Kamal was waiting for Sophie on the bus. He gave someone on the bus some medical advice and the individual offered him a place to sleep in the city to which they were travelling.

Janissary:

Durga and Jersey were in communication with Jan, Gilly and Gladys. They were planning on infiltrating Crystal Security and finding Monster Ann and Thin Kindle. Gilly did not want Jan to go but Jan overruled her. Jan also involved the vigilante police officer in the assault on the building. Inside the building they had to plug Durga in because there was no outside network access. Durga found where the crooks were hiding out and the three assaulted the lower basement. Jan could not shoot Monster Ann or Thin Kindle and Gilly told her that it was right; her father did not want her to become a

killer. Gilly told Jan that she was never there as a mother but she could do this for her, and shot the two crooks. Jan started to cry.

4.1.17.4 Community

4.1.17.4.1 System with player interaction

As promised the previous week, Melissa gave the crew their commendations. She was very happy with the players as her crew. She informed the players that she was not able to capture Dana, so she was going to capture Aunt Margaret. If Dana wanted to stop Melissa from killing her aunt, she needed to come up with an idea to get rid of the sleeping princess.

4.1.17.5 Narrative

4.1.17.5.1 Narrative

The princess was very happy with her ability to take over the phones and celebrated by chanting and singing songs. She made fun of the queen (Melissa) which resulted in Melissa seeking the princess more thoroughly. The princess had to be very careful in getting a peek at the week's secret wave files.

4.1.17.5.2 Narrative hook

As in previous weeks, she provided the players with clues to the names of the wave files. The players guessed the names and sent the file names to the flea with the code word "seek, behold, reveal, recurse" so that he could transmit it to Durga.

4.1.17.5.3 Narrative reward

It would appear that Herzog survived:

Herzog contacted Rani and wanted her to do something about the artefact. He explained to Rani that he was very lucky to survive the crash and wanted to remain hidden and secret for a while. Rani was afraid because she knew Standish was watching her.

The new princess's puzzles contained in the corrupted images more information about Rani.

Rani met Standish for the first time. She was investigating one of the techs who worked on the artefact but it turned out to be a trap set by Standish. He told her that she was committing treason and could be sentenced to a permanent induced coma. To stop Rani he scared her, trying to convince her that Herzog was crazy and that he was not taking his medication. Standish made Rani feel alone, confused and scared.

4.1.17.5.4 Narrative

Dana updated her blog and tried to enlist the help of the players to capture the sleeping princess. She pleaded with them that her aunt was real and that the players' "friend", the sleeping princess, was not. She told the players that they could either help or not, but they would not stop her from capturing the sleeping princess [Appendix A.26].

4.1.17.6 Community

4.1.17.6.1 Player with system

The author expressed her dismay at Dana's decision to turn on the princess. She felt that she could not betray the princess but knew there would be players that would help Dana to capture the princess. She also voiced her suspicions that she thought that Aunt Margaret was not real and that the events was a trap to capture the princess.

4.1.18 Week 15 (26 October 2004 – 31 October 2004)

4.1.18.1 Narrative

4.1.18.1.1 Narrative hook

The new axons for week 15 could be found on recipe7.html. The question for the week was "What insects to hate most?" and the answer was "bees".

4.1.18.1.2 Narrative

The princess found something interesting while spying on the queen. The queen (Melissa) had been telling her crew that Halloween (the coming Sunday) was a significant date. The princess told the flea that she was going home.

4.1.18.2 Community

4.1.18.2.1 Player with player interaction

The players thought the game would end on the official launch of Halo 2 but the new conversation could result in the game ending a week early.

4.1.18.3 Game Action

4.1.18.3.1 Puzzle

The new axon page was updated during the morning showing "unsuccessful experiment | 8:17". Next to the seeking axon there appeared more text: "Ensign Jon needs crewmember assist" (Figure 9).



Figure 9: Showing the requirement for crewmember assist to activate the seeking axon

Recipe7.html updated again showing next to the seeking axon "Ensign Jon needs crewmember assist – Col. Xnbomb COMPLETE" and the axon spike was live (Figure 10).



Figure 10: Confirmation that crewmember assist has been received and the seeking axon is live

The player, Xnbomb, explained to the community: Melissa called the player called Jon and asked for a text marker. The marker was placed

on the recipe7.html page and within a specific time, xnbomb received a call asking for the marker. When xnbomb relayed the text marker, the axon was unlocked.

This continued for the whole day with the time allowed by Melissa between text markers getting smaller and smaller.

The author had a 20 sec timer. She called the other player and when she got through, the player was already talking to Melissa. Melissa informed the player that even though the author got through, she missed the time limit on the text marker.

4.1.18.4 Narrative

4.1.18.4.1 Narrative reward

The players activated the final seeking axon and at that time. The challenge enabled Melissa to corner the princess and destroy her. The players were very upset.

4.1.18.5 Community

4.1.18.5.1 System with player interaction

Melissa congratulated the crew on the error 404 page and was very happy with the crews' performance. She provided a reward to her crew, which was a special session of pre-launch game play of the Halo 2 multiplayer (called "combat training" by Melissa). The players had sent an email to register for the event.

4.1.18.6 Narrative

4.1.18.6.1 Narrative

Dana updated her blog revealing that she was the one adding the text markers [Appendix A.27]. She was told by the operator to "make herself useful". The operator said that she could not track the princess so Dana placed them everywhere when she saw the princess being active. The markers were excerpts from one of her favorite books (Dana's).

Dana said in her blog post that she had done it to save Aunt Margaret.

4.1.18.7 Community

4.1.18.7.1 Player with system interaction

The players were very upset with Dana for betraying the princess. The players felt responsible in part because due to their striving and their desire to activate axons, the princess was caught and destroyed.

4.1.18.8 Game Action

4.1.18.8.1 Puzzle

The players retrieved all the wave files for recipe7.html. The stories were converging and the wave files revealed Herzog and Rani Stories as well.

4.1.18.9 Narrative

4.1.18.9.1 Narrative reward

Herzog:

Herzog contacted McKaskill and asked him about the artefact. It emerged that McKaskill was the one had who activated the artefact, but he did not know why. He told Herzog how he had done it. There were markings all around the artefact and he just touched it in a specific order (triangle, lines, and dot).

Kamal:

Kamal was treating people in return for help and transport. He was heading for New Jersey because he thought the people, who were looking for him, could be found there. He told his assistant that he had fallen in love with the wrong guy's girl.

Jersey and Durga:

Kamal arrived at Jersey's home. He knocked and Jersey opened and invited him in. It appeared as if Jersey was expecting him. Jersey tried to introduce him to Durga but she distorts her voice. Jersey told Kamal that Durga was his sister. Kamal recognised Durga's voice as his sister's. Kamal told Durga that she was now stuck with him. Jersey told Kamal about what Sophie had done for him at the immigration office. Kamal was very upset with Jersey because of the spying. They started to fight but Durga broke the fight up. Durga asked Kamal for help. She said that he had another chance to save her.

Janissary:

Jan tried to sign up to be a soldier but she was 4 month' short of the required 18 years. She impressed the recruitment officer with her abilities (gun assembly, accuracy and eye sight) but the officer would still not recruit her. Jan arrived at Jersey's house and asked Durga to change the age on her certificate. Durga would not do it but offered Jan a job. She wanted Jan to break into the compound where the artefact was kept. The artefact was not Covenant but something more dangerous. Jan wondered why they did not tell the navy or anyone else but was informed that everyone that did that ended up dead or on the front lines. Jan agreed to help.

Rani:

Rani had a conversation with a friend of hers telling her that she wanted a new job. She wanted a change and couldn't

believe that Herzog was crazy. Her friend told her that Herzog was not crazy because if he was, Rani would have known. Jersey arrived at Rani's door and asked her about the artefact. Rani thought it was a trap created by Standish and closed the door on Jersey. Durga called Rani and told her that her friend was right about Herzog. Durga told Rani that she could ask her anything to prove that she could help. Rani asked if the navy knew about the attack on Troy. Durga said yes and provided Rani with a lot of information regarding the attack on Troy. Durga wanted Rani to help them shut down the artifact. If she wanted to help she needed to meet at Jersey's house on Saturday. While Rani was on her way to Jersey's place on the train, she found that she was being followed. She could not convince the guy to leave her alone. The conductor arrived and found that the guy following Rani did not have a working ticket and that he was wanted for a lot of crimes. Durga sorted out the situation.

Janissary, Jersey, Kamal, Durga, Rani:

Everyone met one another and started to plan how they would assault the base where the artefact was being held. Everyone around ideas. They had to wire Durga into the system when they were inside. They did not know how to get inside.

4.1.18.9.2 Narrative hook

Recipe8.html provided the players with the axons for Halloween. There were no puzzle axons or picture corruptions because the princess was dead. The axons would ring on the Saturday, not on the Tuesday as usual.

4.1.18.10 Community

4.1.18.10.1 System with player interaction

Melissa was still very happy with her crew and provided the players with another opportunity to sign up for the special training. She also provided the players with the actual address instead of the GPS coordinates. She gave the players recordings of the previous live calls she had with players.

4.1.18.11 Game Action

4.1.18.11.1 Puzzle

The players found later in the week that the images had corrupted again. This was usually done by the princess. Putting the text together from the corrupted image provided the players with a story a kinto the widow story in the beginning, but different.

4.1.18.12 Narrative

4.1.18.12.1 Narrative reward

The text contained three monologues:

*The first was about Yasmine's last birthday. This was an experience that Yasmine had during her birthday.
Dr. Halsey was the man who created the Spartan 2.0 project. His monologue confirmed that Yasmine was recruited for the Spartan 2.0 project and was turned into an AI.
The widow monologue provided information about Melissa. The princess was a part of Melissa that the widow would have used to reconstruct her. Instead the princess escaped and ended up annoying Melissa instead of helping her.*

The flea was present when the princess was destroyed and was seeking her friends. The players thought that maybe they could reconstruct her.

4.1.18.12.2 Narrative hook

The flea told the players that they could email him on a specific email address that he provided to them on the contactme.html page.

4.1.18.13 Game Action

4.1.18.13.1 Puzzle

The players emailed the flea and he updated the contactme.html page with information about the email conversation. The players could communicate with the flea in real time.

The flea found the princess but she was heavily encrypted and still locked in her box. The players told the flea to unlock her by using her true name. They first attempted Yasmine but had no luck, and then they attempted her name and surname. This unlocked the princess but she was heavily damaged.

The players, due to the widow monologue they received from the images, knew that the princess could be awakened by a kiss. The players told the flea to kiss her. The result was that the queen and the princess merged.

4.1.18.14 Narrative

4.1.18.14.1 Narrative reward

The players felt they had achieved something. They had a sane Melissa who thanked them as her friends (on the 404 error page). She remembered everything that had happened to her before the crash and when she returned to the future on Sunday, the other characters did not have to deal with a rampant AI.

4.1.19 Week 16 (31 October 2004 – 6 November 2004)

The contents of week 16 can be found in the guide at www.wonderweasels.org [Appendix A.28].

4.1.19.1 Narrative

4.1.19.1.1 Narrative hook

The new ILB week started on a Sunday in week 16, not as normally on a Tuesday. Melissa updated the index.html page, thanking the players for everything they had done and pointing them to the 404 error page for a farewell message.

Melissa also updated the humptydumpty.html page with all the transmissions up to date. The players had the opportunity to view transmissions that they had not solved or unlocked.

4.1.19.2 Game Action

4.1.19.2.1 Puzzle

The new axons on recipe8.html had no question attached. All the players had to do was answer the phone and listen.

Due to the ease of activating axons, the players activated a record 1904 axons in one day.

4.1.19.3 Narrative

4.1.19.3.1 Narrative reward

The wave files contained the events of the assault.

Every character had a role to play. When they arrived at the base, Jan distracted the guard while Kamal and Jersey sneaked in. They planted Durga in the base and found the lockdown lab where the artefact was being kept. Rani distracted the guards and an evacuation was sparked. There were still some technicians inside the clean room because they did not hear. The clean room was another area where Durga could not get through. Durga could not go inside to switch off the artefact so someone else had to go in. People could not go in because the air was not breathable. Jersey was the only one who had ever worn a "vac suit", so she geared up with the help of Kamal. Durga told Jersey the sequence to switch the artifact off (reverse of activation sequence, but Rani was not sure if it would work). The guards were becoming restless on the outside and did not believe Rani's story anymore so Jan went to help out. Jersey said goodbye to Durga and went inside. Durga told Kamal that Sophie was alive and she could be found in the refugee camp. She wanted Kamal to be motivated to live. Something happened inside the lab with Jersey and Jan forced Durga to open the airlock. Jan held her breath, went inside and was shot by a technician before she disarmed him and saved Jersey. Jersey deactivated the artefact and got Jan out. Jan had a collapsed lung but Kamal was able to help her (she was very resilient).

*The moment Jersey completed the deactivation, Durga started to spew strange information: “Module Core Hemorrhage! Warning! This medium is classified and has a strong intrusive inclination! *alarm sirens* Warning! Network throttling has eroded! This medium is wide awake and physical. The medium has metastasized! I love bees! I love bees! Make your decisions accordingly. I LOVE BEES! “.*

No one knew what was going on with Durga. Rani was caught at the doors and she pretended that there were terrorists inside the lab. Durga wanted to be copied to the outside so the new Durga could merge with the old one. Jersey did not want to but Kamal said that the new Durga contained Yasmine so he would not allow her to be left behind.

Rani got caught during her subterfuge while Durga radio controlled a tank to blow a hole in the building so they could escape. Durga would not give up on Rani and would save her. The characters saved the world.

4.1.19.3.2 Narrative

Dana updated her blog saying that she thought they had done the right thing [Appendix A.29]. They sent a girl home. She did not know what it would mean for them as players but she expected at least one more update on Thursday.

4.1.19.3.3 Narrative hook

The flea updated with new axons on contactme.html. These axons were provided on Tuesday to be answered on Thursday (usually it would be provide on Friday to be answered on Tuesday). The flea also added the previous story waves to the humptydumpty.html page.

4.1.19.4 Community

4.1.19.4.1 System with player interaction

Dana posted that she had found another communication of Melissa.

The puppet masters were aware of most players not being able to make the “special training sessions” so would provide locations for the players to pick up a DVD with all Melissa’s communications on it.

4.1.19.5 Narrative

4.1.19.5.1 Narrative reward

The last waves provided by the flea contained the end of the story:

Rani got a visit from her friend while she was in jail. Durga talked to Rani through her friends “chatter”. She informed Rani that Standish was being investigated for the breach at the base where the artefact was held, and attempted murder. Durga informed Rani that she would be released soon. Jan left to pick up Rani from the police station. Jersey told Durga that he had been drafted. Durga did not want Jersey to enlist yet and wanted him to stick around for a while longer. Durga told Jersey about another artefact discovered close to Reach that looked the same as the one they had but was the size of a planet. It appeared that the device was designed to

destroy the galaxy, so by deactivating the device, they saved everyone.

Durga revealed that she was Melissa (the operator). The Apocalypse found the artefact and turned back to home. The ship exploded and a part of the ship AI (Melissa, Durga, the queen) was blown back in time and another part attached to Jersey's communication system (Melissa knew Jersey's father on the ship). Durga talked about the part that was blown back in time. She had friends there who took care of her. They were like family.

Durga talked about how Yasmine felt when she got her final treatment. Yasmine grew up to become the personality called Durga. Kamal told Durga that he was sorry for not having come for her.

Jan dropped Kamal at the station and Kamal returned home. Jan talked to one of the 1.1's (the children of the first Spartan project soldiers) called Kevin. He said they were planning an operation into Covenant space. They had backing and another twelve 1.1's. He wanted Jan to join because of her experience with Durga. They did not want to be under section control. Kamal arrived home where he found Sophie and his parents. His parents had got away before their home was destroyed. Durga made Sophie a citizen and Kamal asked her to marry him. Kamal then wanted to tell his parents about Yasmine and Durga but before he could, Durga told him that the Covenant ships had arrived.

Rani received a job at Section Zero (internal affairs) thanks to Herzog.

4.1.19.6 Game Action

4.1.19.6.1 Puzzle

Each of the four special training events received a puzzle. When solved, these puzzles provided access to another hidden page on ilovebees.com.

4.1.19.7 Narrative

4.1.19.7.1 Narrative reward

The hidden page ([apocalypso.html](#)) contained a final message from Melissa (in a wave file).

Melissa revealed to the players in this final message that she had deceived them. She had faked the final two transmissions of Herzog. She wanted to get a message to Durga through the flea.

It also turned out that the flea was the Covenant virus which she feared had infected her in the beginning. That was the reason why she had hunted the princess. She had thought it was the princess.

She said goodbye to the players.

4.2 Production ARG - Year Zero summary

4.2.1 Introduction

Year Zero was the name of the ARG created by 42 Entertainment [Appendix B.1] for a concept album by the band, Nine Inch Nails (NIN). The album was also titled Year Zero and was described as a concept album by Trent Reznor (the sole member of the band) because it was about “the end of the world”.

The ARG took place from the 12th February 2007 until 24th May 2007 [Appendix B.2] and involved the discovery of websites and clues left at concert venues. The release of the album was incorporated into the game which took place close to the end on 13th April 2007 in the United Kingdom, and the 17th April 2007 worldwide [Appendix B.3]. Year Zero incorporated a story with the music of Nine Inch Nails to paint the picture of a bleak future where countries were run by Theocracies and where the people of the countries were robbed of their basic freedom in the name of safety.

This study will attempt to analyse the events of Year Zero from various sources. All sources were created by players of the game and were mostly created after the fact.

The following information was taken from the first section of the Year Zero guide found on www.wonderweasel.org [Appendix B.4].

4.2.2 The rabbit hole and week 1 (12 February 2007 to 18 February 2007)

4.2.2.1 Rabbit hole

4.2.2.1.1 Hook

The game started when players discovered highlighted letters on the back of a Nine Inch Nails (NIN) concert t-shirt (Figure 11).



Figure 11: The back of the 2007 Nine Inch Nails tour t-shirt [Appendix B.5]

These letters when placed together spelled out iamtryingtobelieve which led the players to the website, iamtryingtobelieve.com [Appendix B.6]. The players visited the website and found that everything on the website looked jumbled and could only be read by pressing Ctrl-A on the keyboard (which selected everything on the page) (Figure 12).

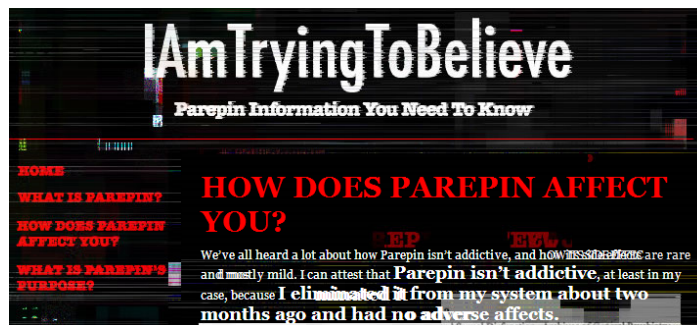


Figure 12: A screenshot of iamtryingtobelieve.com

4.2.2.2 Narrative

4.2.2.2.1 Narrative

The website introduced the players to a drug known as Parepin. According to news articles on the website, the drug was placed in the water supply so the citizenry could be protected against biological terrorist attacks (Parepin claimed to have an immune boosting effect). From the news articles the players could see that the drug had side effects, particularly hallucinations, which resulted in people seeing something they called "The Presence" (Figure 13).

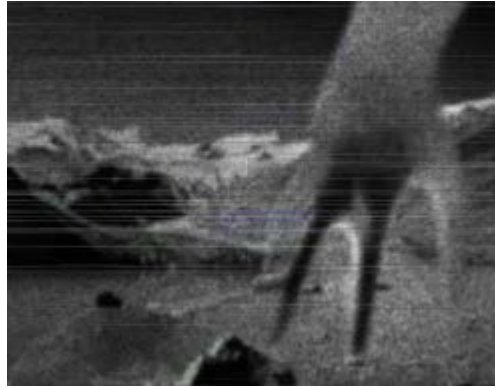


Figure 13: The hand-like thing coming out of the sky known as The Presence

The creator of the site also hinted at “the real purpose” of Parepin which was to control the general population and keep the people complacent. There were small groups of people that claimed to have stopped drinking the Parepin laced water and had not experienced any side effects or biological effects. They also reported to feeling more alert and clear headed.

4.2.2.3 Narrative

4.2.2.3.1 Narrative hook

The players could find an email address on the website as well (water@iamtryingtobelieve.com) which they could email. When the players emailed the address they received an auto reply message stating that there was nothing wrong with the water and that people should continue to drink the water.

4.2.2.3.2 Narrative

From the auto reply it was evident that someone (probably from the government – assumed by the author of the guide) influenced the creator of the website.

4.2.2.4 Game action

4.2.2.4.1 Link

The players also found strange numbers on the website which was formatted 24.x.x. During the early phase of the game, the players did not know what these numbers were for or what they meant. There were two numbers found on the iamtryingtobelieve.com website:

- 24.14.3 – This number was found on the main page when pressing Ctrl-A, to the left of the image of “The Presence”.
- 24.14.2 – This number was discovered by counting the dashes in the auto reply email the players received from water@iamtryingtobelieve.com.
- 24.14.1 – This number was originally discovered on the concert t-shirt.

4.2.2.4.2 Puzzle

Note: Due to the nature of ARGs and their players, some tasks did not require the PM's instructions. Reverse DNS lookup, viewing sources and attempting to solve cryptography are only some of the examples.

The players discovered more websites by using a technique called reverse DNS lookup. Reverse DNS lookup provided the user with a list of domains hosted on a specific IP address. The list of the relevant Year Zero sites was posted on the unfiction forum by a player called SpaceBass [Appendix B.7].

4.2.2.5 Narrative

4.2.2.5.1 Narrative reward

The website www.anotherversionofthetruth.com contained a very grim look of the future where there is zero tolerance and zero fear and is also controlled by an entity called the American Bureau of Morality [Appendix B.8]. The website depicted a tranquil looking farm with an American flag superimposed over the vista and large letters stating “America is born again!”

4.2.2.6 Game action

4.2.2.6.1 Puzzle

In reality the site was developed in Adobe Flash and when the players held in the mouse button and dragged it over the image, a whole different version of the website was revealed (Figure 14).

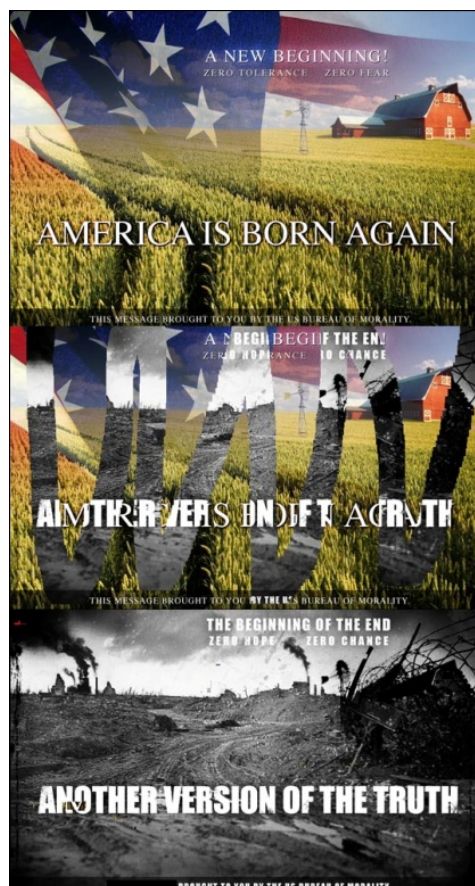


Figure 14: Anotherversionofthetruth.com from first seen until after the players scratched off the top layer

4.2.2.6.2 Link

The players also found another number (24.10.8) on this website when they selected all the text on the page. The players clicked on the words

“Another Version of the Truth” which took them to a forum that looked similar in design to the website, iamtryingtobelieve.com.

4.2.2.7 *Narrative*

4.2.2.7.1 *Narrative*

The forum on anotherversionofthetruth.com contained more stories from people about the oppression of their government. There were a lot more explicit details of actions by the government and the people working for it.

4.2.2.7.2 *Narrative hook*

The players found an audio recording of an innocent child being beaten to death by the police. Another recording contained the musings of an American born terrorist while he executed his plans of blowing up Wrigley Field (a baseball field).

4.2.2.8 *Game action*

4.2.2.8.1 *Puzzle*

At the end of each of the audio files the players found, they could hear Morse code fragments.

4.2.2.8.2 *Link*

Deciphering these fragments gave the players three more number sequences.

- 24.10.1
- 24.10.5
- 24.10.3

4.2.2.9 *Community*

4.2.2.9.1 *System with player interaction*

On anotherversionofthetruth.com there was a member who pointed the players towards www.bethehammer.net which contained his psychotic ramblings [Appendix B.9] (Figure 15).



Figure 15: The main page of “Be The Hammer”.

The character who pointed them towards betthehammer.net was depicted as being psychotic. The author of the guide described him as “psychopath scary”.

4.2.2.10 Narrative

4.2.2.10.1 Narrative

The character used to be a member of the 105th Airborne Crusaders. They were given a special drug that counteracted the effects of Parapin and turned them into the perfect soldiers. A side effect of the drug was that the soldiers could not return to society.

He gave details on the website about the work he did as a soldier. He took part in “wetwork missions” which were assassination mission and in some cases destroyed whole communities in a single night. These were all government sanctioned missions. He left the 105th Airborne Crusaders because he burnt out (this was assumed by the author based on what they found on the mallory page [Appendix B.10]) and was working against the government providing tips to the public on how they could fight back against the oppression.

4.2.2.11 Game action

4.2.2.11.1 Link

The players also discovered another number on the index page of www.bethehammer.net

- 24.10.7

4.2.2.12 Community

4.2.2.12.1 Player with player interaction

The players discovered another website, <http://105thairbornecrusaders.com/> (Figure 16), which the author said could be guessed based on the content of betthehammer.net or they could just have used the results of the reverse DNS lookup.

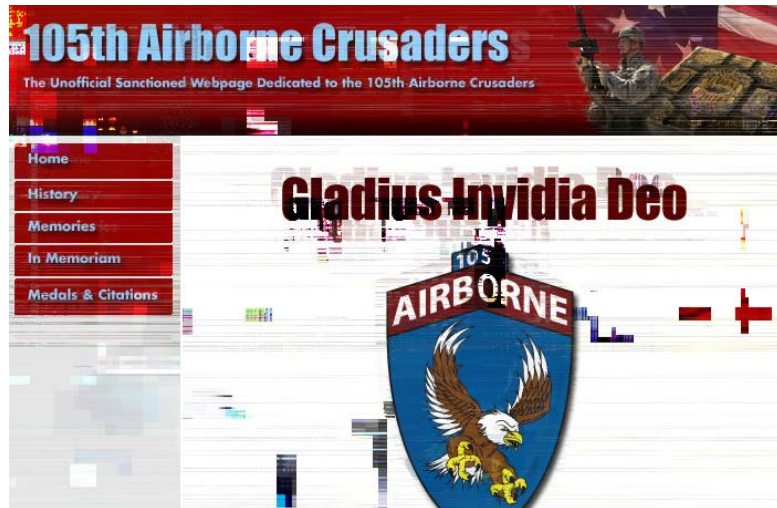


Figure 16: The main page of the 105th Airborne Crusader's webpage.

4.2.2.13 Narrative

4.2.2.13.1 Narrative

The 105th Airborne Crusaders website contained more information about that specific unit. From the website the players found that the government was fighting a holy war, a new crusade and the 105th Airborne Crusaders was just that, the new crusaders.

4.2.2.14 Community

4.2.2.14.1 Player with Player interaction

The players understood why the people that were not taking Parapin anymore were fighting against the government. The author of the guide went so far as to say that he/she would also have become an extremist but then he/she mused that maybe it would have been better to stay on the Parapin so that he/she could forget what was going on.

4.2.2.15 Game action

4.2.2.15.1 Link

The players also found another number on the main page of <http://105thairborne Crusaders.com/>.

- 24.10.6

The author of the guide returned to another version of the truth.com forum section again.

4.2.2.16 Narrative

4.2.2.16.1 Narrative hook

In one of the threads, the players found a comment made by one of the members of the forum, guiltfree. His/her specific post told the members of the forum to “check out the inbox of nooneimportant at consolidated mail systems” [Appendix B.11].

4.2.2.17 Game action

4.2.2.17.1 Puzzle

The players went to <http://www.consolidatedmailsystems.com/> and were directed to http://www.consolidatedmailsystems.com/citizen_unknown [Appendix B.12]. Based on what was said by guiltfree in the post, the players tried going to <http://www.consolidatedmailsystems.com/nooneimportant> and found the “door left wide open” [Appendix B.13].

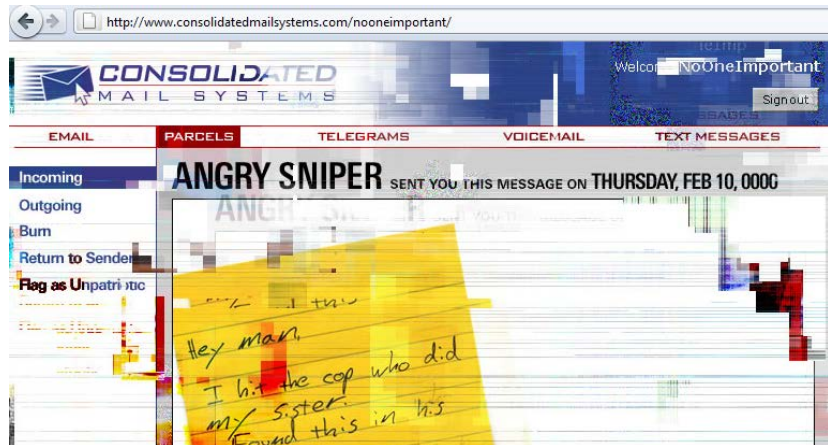


Figure 17: The profile of "nooneimportant" on the Consolidated Mail System website.

4.2.2.18 Narrative

4.2.2.18.1 Narrative reward

The message shown in Figure 17 looked to the players as if it was sent from the author of bethemhammer.net. The creator of the message sent it to someone called nooneimportant and talked about "hitting a cop who did my sister". The message creator also attached a note he/she found in the pocket of said policeman.

The note talked about a drug called Opal. The note also contained information that insinuated that there was a link between the consumption of Opal and sightings of "The Presence". The author of the guide commented that maybe the government had inserted the insinuation to link the drug to the sightings. The government were fabricating "evidence" to suit their own needs.

4.2.2.19 Game action

4.2.2.19.1 Link

If the players clicked on any of the other links on the website, they would have received an error:

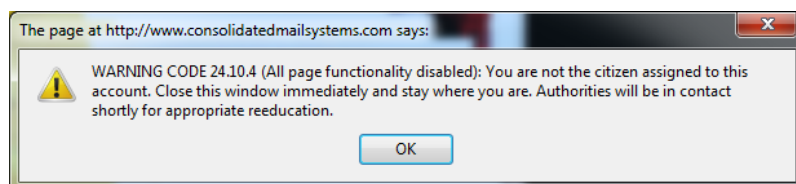


Figure 18: The error when clicking on any other link.

The error contained another number, 24.10.4 as well as a warning that the player was attempting to access an account which did not belong to them and that they should stay where they were. They were informed that authorities would be in contact for appropriate re-education (Figure 18).

4.2.2.20 Narrative

4.2.2.20.1 Narrative

The last of the websites discovered by the reverse DNS lookup was www.churchofplano.com [Appendix B.14]. The site could have been discovered by listening closely to one of the audio files discovered on the forum of another version of the truth.com.

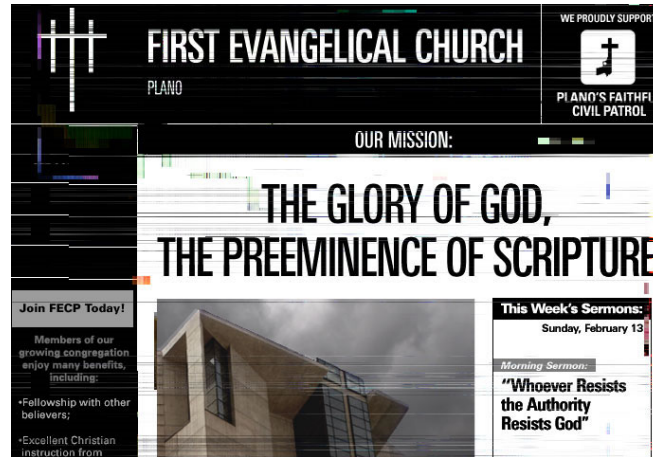


Figure 19: The front page of the "Church of Plano" website.

The website presented the ideas put forth by the Church of Plano. The players were presented with the sermons of the church as well as some of their associated groups. One of these groups were the "Plano's faithful civil patrol" which was a civilian group that enforced the beliefs of the church.

The website appeared to be used as another propaganda tool where the truth is construed to fit into what the government (and church in this case) wanted the civilians to think. The website mostly blamed the "bad things" on "The Presence" which appeared to be an attempt to shift focus away from what actually could have been the problem (Parapin).

4.2.2.21 Game action

4.2.2.21.1 Link

The players discovered another number on the Church of Plano website:

- 24.10.2

4.2.2.22 Rabbit hole

4.2.2.22.1 Hook

At a NIN concert on the 14th of February 2007 in Lisbon, Portugal, someone discovered a thumb drive in one of the bathroom stalls. On the thumb drive the player discovered a copy of the NIN song, My Violent Heart.

When the player looked in the META data of the audio file he/she found the text "found in men's bathroom, stall 4, coliseum, lisbon, portugal / another version of the truth .com / dig / 24.3.2".

4.2.2.23 Game action

This provided the players with another number.

4.2.2.23.1 Link

- 24.3.2

4.2.2.24 Complete component

At the end of the audio files the players could hear strange static. One of the players (galoot3000) decided to put the static part through a spectrograph [Appendix B.15]. The result was an image of “The Presence” (Figure 20).

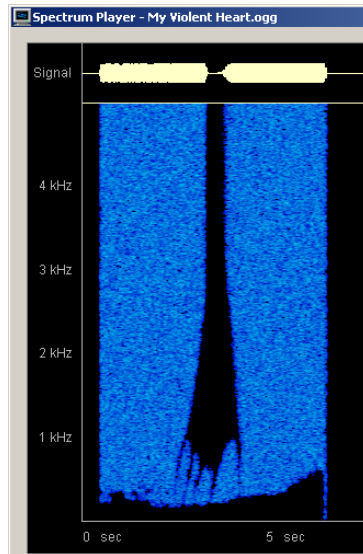


Figure 20: A spectrograph of the static at the end of the "My Violent Heart" audio file.

4.2.2.25 Complete component

Along with the discovered thumb drive, a new concert t-shirt contained highlighted numbers (Figure 21).

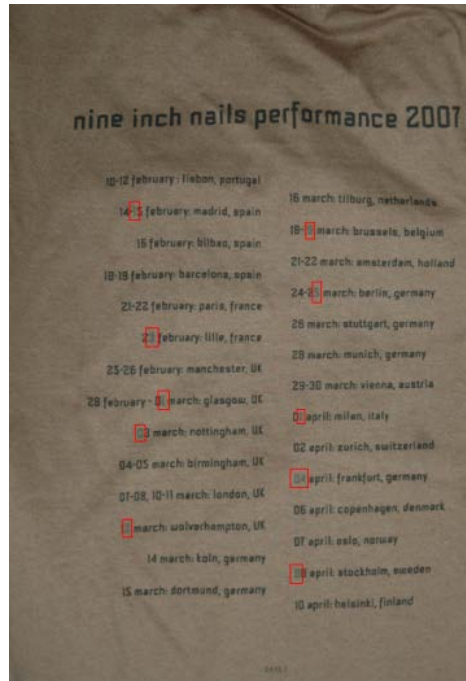


Figure 21: The highlighted numbers on the Lisbon concert t-shirt and the new number set at the bottom of the shirt.

The highlighted numbers provided the players with a telephone number (1-310-295-1040) which led them to another audio file.

4.2.2.26 Game action

4.2.2.26.1 Link

The t-shirt also contained another number set

- 24.15.1

4.2.2.27 Narrative

4.2.2.27.1 Narrative reward

The audio file contained a recording of a man talking about the presidential address. He told the listeners that they should not be afraid to act just because of fear of a prison sentence. They already were in a prison which referred to the oppressive government of Year Zero.

4.2.2.28 Game action

4.2.2.28.1 Link

At the end of the audio file the players found Morse code. After deciphering the Morse code, they found two new sets of numbers.

- 24.3.2
- 24.15.2

4.2.2.28.2 Puzzle

One player of the year zero community, morethanshapes, attempted to collect all the backward text found in the images of the various Year Zero websites [Appendix B.16]. The player rearranged the letters and found that it was a quote from the J.R.R Tolkien book, The Hobbit.

4.2.2.29 Community

4.2.2.29.1 Player with Player interaction

The player, morethanshapes, shared his discovery with the community. The players shared theories of what the meaning of the results was, with one another.

At that point in time the players did not know what the relevance was or even if it was relevant. The author of the guide theorised that maybe the website were coming to them through a library network and the websites were “corrupted” with pieces of the scans of burnt books.

4.2.3 Week 2 (19 February 2007 to 25 February 2007)

4.2.3.1 Community

4.2.3.1.1 Player with Player interaction

Based on the community’s speculation that the hidden text was from The Hobbit by J.R.R. Tolkien, and that the passage was from a note written to Bilbo (one of the characters in the book), the players thought that the next clue would be found in Bilbao. Spain (Bilbo and Bilbao are pronounced the same).

4.2.3.2 Game action

4.2.3.2.1 Lead-in mechanism

The next clue was indeed found in Spain but at a concert in Barcelona. The player who found the pen drive that contained two audio files (Me I’m Not.mp3 and 2432.mp3) and shared it with the community. 2432.mp3 sounded, as the author of the guide described it, as crickets chirping.

4.2.3.2.2 Puzzle

The audio file was put through a spectrograph and the players found a phone number in the image [Appendix B.17].

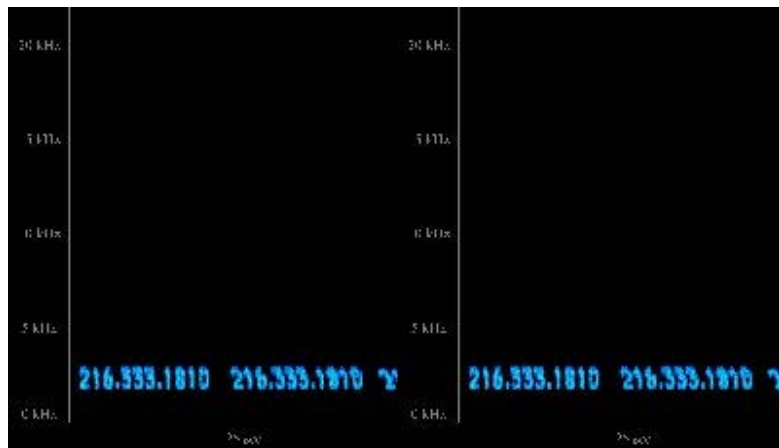


Figure 22: The phone number found in 2432.mp3 using the spectrograph.

The players called the number found in the audio file (shown in Figure 22) and heard a recording of a conversation between two people. The

recording appeared to have been made by the government by tapping the people's telephones.

4.2.3.3 Narrative

4.2.3.3.1 Narrative reward

The conversation the players heard when they called the number was between Robi and Mia:

Mia called from a club and she was panicking. She told Robi about someone who came into the club and started killing people. He was covered in blood which appeared to be coming from his own skin. Robi then told her he was going to call the police but she explained that they were outside. She said she was going to die and then told Robi that blood was also coming from her skin. The conversation ended abruptly.

4.2.3.4 Game action

4.2.3.4.1 Link

There was also static playing on the recording which the players deciphered as another number. The numbers the players found were:

- 24.3.1
- 24.3.3 Which the players found in the ID3 tag of the audio file 2431.mp3.

4.2.3.4.2 Lead-in mechanism

The recorded telephone conversation also led the players to www.uswiretap.com [Appendix B.18]. US Wiretap also contained the number found in the ID3 tag of the audio file (24.3.3).

4.2.3.4.3 Puzzle

Viewing the source of www.uswiretap.com, the players found a number in the keyword META data (71839J). When the players visited the website, it forwarded them to http://www.uswiretap.com/case_number_required/. They placed 71839J where the URL said case_number_required and the players gained access to a case file which contained a telephone conversation between a Bureau of Morality agent, T.C. Sikes and a police sergeant called Jeff Slanski [Appendix B.19].

4.2.3.5 Narrative

4.2.3.5.1 Narrative reward

The uncovered telephone conversation led the players to believe that whatever caused the events from section 1.3.2 was being covered up by the Bureau of Morality. The people in the club Mia was calling from were locked in there and then later the Bureau went in and burned everything. The police officer was there doing "crowd control" and he was being interrogated about what he saw by the Bureau agent.

4.2.3.5.2 Narrative hook

On the 22nd of February 2007 in Paris, France there was another NIN show. The players received flyers that were handed out at the show which pointed them to another website (Figure 23).

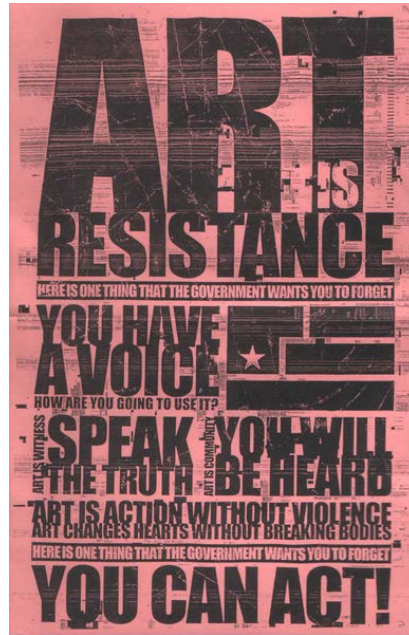


Figure 23: The "Art is Resistance" flyer from the Paris, France show.

4.2.3.5.3 Narrative

The website revealed by the flyer in Figure 23 took the players to www.artisresistance.com. The first thing the players discovered on the site was that the Bureau of Morality does not condone players visiting the site. Staying on the page for a while resulted in a warning popping up with warning sounds playing (Figure 24).



Figure 24: The warning from the Bureau of Morality that popped up on Art as Resistance.

From the warning the players could deduce more information about the state of the world and the extent of the government control. The warning stated that by viewing the web page the player (or the citizen) would lose his/her citizen increments which may influence the citizen's ability to drive across state lines, hold specific types of jobs or obtaining

licenses. The licenses included marriage, worship (a license to worship), business and child-bearing (a license to have children).



Figure 25: The Art is Resistance website without the warning.

Art is Resistance (AIR) was an organization dedicated to peaceful resistance against the government. The founder of the site was arrested by the government which showed that they (the government) did not agree with “peaceful resistance”. The players wondered why the government chose to keep the AIR website active as well as Another Version of the Truth even after their founders were arrested and “re-educated”. The author of the guide theorized that the sites were kept as a “honey pot” so the government could keep an eye on “the threat”.

More information about the world the ARG took place in also surfaced. Based on one of the character’s posts on the AIR website (a section contained archived threads from Another Version of the Truth), world war 3 has already taken place or was still ongoing. The theory was that that conflict resulted in the Post-Iran war as well as the military theocracy of that specific time in the game.

4.2.3.6 Game action

4.2.3.6.1 Link

The website also contained another number (on the warning popup):

- 24.13.1

4.2.3.6.2 Lead-in mechanism

On the Year Zero website, yearzero.nin.com, the players found a video clip that contained footage of “The Presence” [Appendix B.20]. The video started off with an individual taking video footage out of the window of a car. A blue road sign flashed by during this time which the players found contained the words “I am trying to believe”. All of a sudden “The Presence” appeared on the horizon.

4.2.3.6.3 Puzzle

In one of the frames of the video, the players found the text “/0024”. The players extended the Year Zero website URL – yearzero.nin.com/0024 and found a picture of the presence as seen in Figure 26 [Appendix B.21].

4.2.3.7 Narrative

4.2.3.7.1 Narrative reward



Figure 26: The four fingered Presence found on the Year Zero website.

4.2.3.7.2 Narrative hook

At a concert in Manchester, England on the 25th of February 2007 the players discovered another hidden USB stick with another song, This Twilight, and an image file [Appendix B.22]. The image was a picture of the Hollywood sign with the words “In Memoriam” written at the bottom. The players found another website based on the image, www.hollywoodinmemoriam.com [Appendix B.23].

4.2.3.8 Game action

4.2.3.8.1 Puzzle

The players found another piece of text hidden inside the image.

4.2.3.8.2 Link

The players also found another number on the new website.

- 24.17.1

4.2.3.9 Narrative

4.2.3.9.1 Narrative

The new website revealed details about the events that led to the state of the world at that point. Terrorist detonated a “dirty bomb” (a bomb consisting of radioactive material) at the 81st annual Academy Awards in Los Angeles. The game took place in 2007 and the 81st Academy Awards would have taken place in 2009. The terrorist detonated other bombs at different locations as well as ricin attacks.

4.2.3.9.2 Narrative reward

The hidden text was a segment from a book called Caution by Walt Whitman.

4.2.4 Week 3 (26 February 2007 to 4 March 2007)

4.2.4.1 Game action

4.2.4.1.1 Puzzle

On the 27th of February 2007 players who bought the NIN high definition release of “Beside You In Time” discovered a clue in the

booklet of the HD-DVD and Blu-ray box. In the booklet players found text which spelled out “solution backwards initiative” which led the players to www.solutionbackwardsinitiative.com which in turn redirected to <http://www.securebroadcastinformatics.com/> [Appendix B.24]. At the time of writing the Solutions Backwards Initiative did not function anymore but manually navigating to Secure Broadcast Informatics would take the viewer to the correct site.

4.2.4.2 Narrative

4.2.4.2.1 Narrative reward

Secure Broadcast Informatics appeared to be a company dedicated to providing secure connections from one location to another. The author of the guide remarked that this was done so the public would not be able to see what the government of Year Zero was doing.

The company would also turn in any person they detected that was on the 1000 Most Wanted List. Secure Broadcast Informatics was founded by scientists and continued their work into retro-causal communications systems.

Retro-causation is a concept of causation where the effect can temporarily precede the cause [Appendix B.25]. In-depth understanding of the concept is not required but a cursory definition is required to understand that in the story, Secure Broadcast Informatics was responsible for the “bleeds” from their universe into ours (this will be explained in more detail later).

4.2.4.3 Community

4.2.4.3.1 Player with system interaction

By mailing the email address the players found on the website Francisco@securebroadcastinformatics.com the players received an auto reply. The auto reply gave the players the image of what was going on at the company.

4.2.4.4 Narrative

4.2.4.4.1 Narrative reward

Francisco was an IT specialist in the company and worked with friends inside the company (graduate students and immanent professors) to “make America a better place to live in”. The email stated that the police would be coming for him and his friends as he wrote the auto reply message. The email also contained a forwarded email from a blocked email account that threatened him subtly (the paperwork for his wife’s breast cancer treatment took very long and he had to explain certain “discrepancies”. The faster he can explain these “discrepancies” the faster his wife could receive approval for her treatments.

4.2.4.5 Game action

4.2.4.5.1 Puzzle

If the players counted the number of > characters in the auto reply email they could deduce another number set:

4.2.4.5.2 Link

- 24.19.1

4.2.4.5.3 Puzzle

The website also appeared to have moveable elements to it (created using Adobe Flash). By moving these elements the players could construct username and password boxes. Before completely assembling the textboxes the players saw the system automatically typing in the password.

Below Figure 27, Figure 28 and Figure 29 show the phases of completing the puzzle.



Figure 27: Assembling the puzzle.

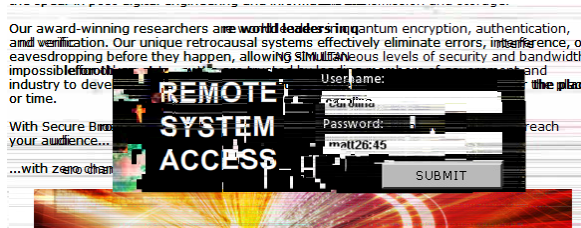


Figure 28: As the players assembled the puzzle, the password box automatically filled in.

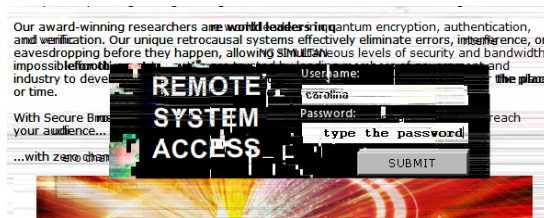


Figure 29: The players could input the password they saw into the textbox when the puzzle was completed.

The players successfully assembled the puzzle, typed in the password and were redirected to <http://www.solutionsbackwardsinitiative.net/pilgrims>. At this point the players were not redirected back to Secure Broadcast Informatics.

4.2.4.6 Narrative

4.2.4.6.1 Narrative reward

<http://www.solutionsbackwardsinitiative.net/pilgrims> Appeared to be the location of the scientist who did not like what Solution Backwards Initiative have become (SBI Pilgrims). Through the players' exploration of the scientist's white board postings they found that they were attempting to send information back to the past to stop the events of

Year Zero from happening. They were using the systems of Secure Broadcasting Informatics but could not hide their tracks effectively (thus the email sent to Francisco to explain the discrepancies) so they decided to schedule a live test of their system.

While the players read the white board postings of the scientist a chat applet popped up and the players could see the “live” scheduled test of the SBI Pilgrims. The players witnessed the test not going as smoothly as the SBI Pilgrims expected. The login section of their secret site (<http://www.solutionsbackwardsinitiative.net/pilgrims>) accidentally appeared on the front page of <http://www.securebroadcastinformatics.com> which was an expected “data leak” of the test. This event sent a signal to the authorities and one of the SBI Pilgrim members was knocked offline. The authorities did not respond fast enough and a large spike of data was sent through to the players’ time. The data spiked contained the websites as well as the pieces of text from banned books in the time of Year Zero and that was why the players could see the websites from the time of Year Zero.

The <http://www.solutionsbackwardsinitiative.net/pilgrims> contained hidden text as well from the book Huckleberry Finn. Up to that point the players had discovered quotes from:

- The Hobbit by J.R.R Tolkien
- Caution by Walt Whitman
- Adventures of Huckleberry Finn by Mark Twain

That meant that the abovementioned books were banned in the time of Year Zero.

4.2.4.7 Game action

4.2.4.7.1 Link

At this point in the game the players did not know what the numbers meant. They discovered another number set on the SBI Pilgrim page:

- 24.19.12

4.2.5 Week 4 (4 March 2007 to 11 March 2007)

4.2.5.1 Game action

4.2.5.1.1 Lead-in mechanism

The players received another USB memory stick at a concert on the 7th of March 2007. This time the item was not discovered in a bathroom but actually handed out to players. The USB memory stick contained a music video of one of the NIN songs called Survivalism.

In the video the players could see a bank of security monitors which displayed a SWAT team assaulting an apartment building. The SWAT team eventually reached their target and presumably killed him/her. The players could also see AIR members (Art Is Resistance) spray painting an AIR flag using stencils.

4.2.5.1.2 Puzzle

The players who took a more precise approach watched the video frame by frame and found that the time code at the bottom of the security monitors was not always a time code. The frames spelled out the following (Figure 30):

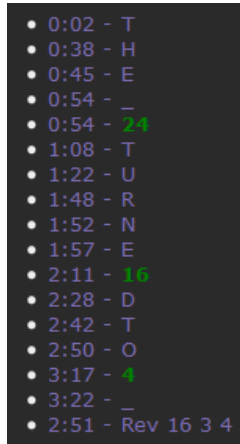


Figure 30: The frames that did not contain time codes with their corresponding time code.

4.2.5.1.3 Link

This analysis provided the players with another number set (24.16.4).

4.2.5.1.4 Puzzle

The analysis also led the players to this sentence with missing words: ‘THE _ TURNED TO _’ as well as a bible verse; Rev 16:3-4. The players found that the bible verse contained the sentence ‘The water turned to blood’. This led the players to www.thewaterturnedtoblood.com [Appendix B.26].

4.2.5.2 Narrative

4.2.5.2.1 Narrative reward

The website www.thewaterturnedtoblood.com was created as a therapeutic tool for inmates of a mental facility. This specific website was for inmate number #4382BX12. The warning at the top of the page mentioned an institution called the Judson Ogram Correctional Facility.

4.2.5.3 Game action

4.2.5.3.1 Link

Selecting all the text the players found another number set as well:

- 24.16.1

4.2.5.3.2 Puzzle

At the bottom of the page players could see the text shown in Figure 31.



Figure 31: The message left by the inmate.

The change in case for the letters spelled out the name “Francesca” three times. After investigating the source code of the webpage the players found a hidden login box on the page. The players discovered that “Francesca” was not the password and decided to move on from the puzzle for a while.

Based on the warning at the top of the page, the players found a website for the Judson Ogram Correctional Facility [Appendix B.27].

4.2.5.4 Narrative

4.2.5.4.1 Narrative reward

Judson Ogram Correctional Facility appeared to be a facility where the criminals of society in Year Zero were taken to be rehabilitated. The facility was described as a “humane, safe and efficient prison” (Figure 32).

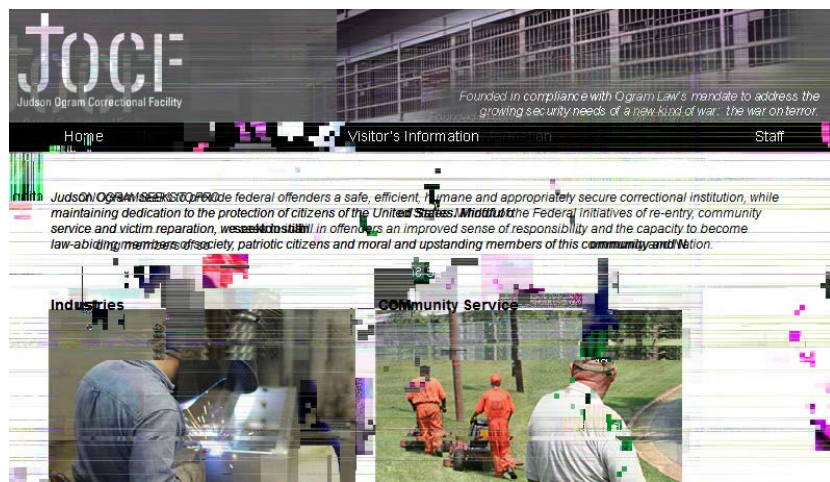


Figure 32: A screenshot of the Judson Ogram Correctional Facility website.

4.2.5.5 Game action

4.2.5.5.1 Link

The players found another number set on the Judson Ogram Correctional Facility website:

- 24.16.2

4.2.5.5.2 Puzzle

At the bottom of the staff page of the website the players found a login box where they could enter a name, case number and a password. At this point of the game, the players had two case numbers:

- 71839J found on the US Wiretap webpage.
- 4382BX12 found on the Water Turned to Blood webpage.

The players could not use the first case number because they did not find any reference to anything they could use as a password, so the players moved on to the second case number. The players assumed they had the password for the second case number (Francesca) but they needed a name.

In one of the pictures on the staff page of the website the players found a resident psychiatrist wearing a name tag. From this name tag the players retrieved the required name for the access details.

- **Name:** Preston Gantry
- **Case Number:** 4382BX12
- **Password:** Francesca

4.2.5.6 Narrative

4.2.5.6.1 Narrative reward

The players gained access to the private files of the psychiatrist related to that specific inmate. The doctor did not consider inmate #4382BX12 (named John) as a threat but was overruled by "someone". This someone demanded that John be thrown in jail as a terrorist without a trial.

Dr. Gantry found John to have a magnetic personality which drew in people and even in the end, drew in Dr Gantry. There was a record of a conversation Dr. Gantry had with John moments before he was executed where the doctor asked John to recant his statements. John refused and was executed.

The players discovered that Dr. Gantry and his daughter, Francesca, were arrested and sent for re-education due to Dr. Gantry questioning the authorities and their motives with regards to John.

4.2.5.7 Game action

4.2.5.7.1 Puzzle

The players found a lot of information about inmate 4382BX12, after their investigation known as John from Boston. The players still did not have a password for Water Turned to Blood. From Dr. Gantry's conversation with John the players found that John quoted scripture. The players placed the phrase "We wrestle not against flesh and blood, but against principalities" into Google and found it to be from Ephesians 6:12. Trying "Ephesians 6:12" as the password for the login box on Water Turned to Blood the players found <http://www.thewaterturnedtoblood.net/bridge.htm> [Appendix B.28].

4.2.5.8 Narrative

4.2.5.8.1 Narrative reward

This section of the webpage contained the ramblings of a man who was clearly disturbed. John considered himself to be a prophet of "The Presence" and was completely convinced that it was real.

From his writing the players found that he felt extreme guilt over the death of his daughter (whom the players never could name). The whole section provided a very sad back story to a very tragic character.

4.2.5.9 Game action

4.2.5.9.1 Link

The players found another number set in the ramblings of John from Boston:

- 24.16.3

4.2.5.10 Narrative

4.2.5.10.1 Narrative hook

During the players' investigation of the staff section of Judson Ogram Correctional Facility, they skimmed over the mentioning of a company called Cedacore - www.cedacore.com [Appendix B.29].

4.2.5.10.2 Narrative

Cedacore was the creator of Parepin and also created other drugs which were sold to the general public. These drugs were designed to make the user more compliant to the government powers and Cedacore's alliance could clearly be seen from the design of the website (inclusion of a cross in their logo).

The players found a unique quiz (Stationary Anxiety Quiz) on the Cedacore site which was designed to show to the quiz taker if he/she needed to take Prozira (which was another drug Cedacore designed). Based on the question it appeared to the players that no matter what they answered, the quiz would show that the quiz taker should be taking Prozira.

4.2.5.11 Game action

4.2.5.11.1 Link

There was also another number set on this webpage:

- 24.18.1

4.2.5.12 Narrative

4.2.5.12.1 Narrative hook

The next live event took place on the 11th of March 2007 at the NIN show in Brixton (London), England [Appendix B.30]. The players found a number of AIR (Art Is Resistance) flyers posted around the concert venue. These flyers appeared to be the same as the previous concerts flyers but were yellow rather than red (Figure 33).

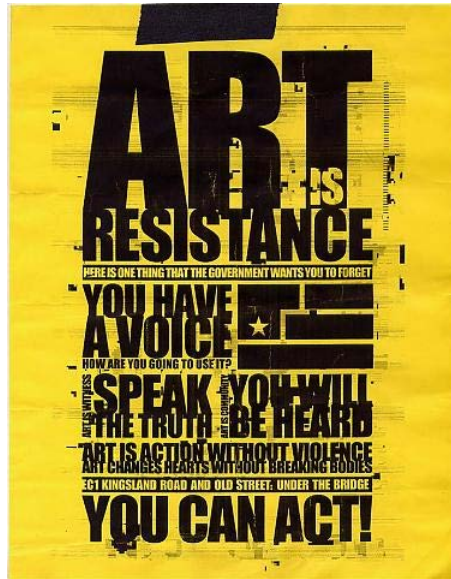


Figure 33: The AIR flyer from the Brixton concert.

The flyer contained an address.

4.2.5.13 Game action

4.2.5.13.1 Link

They contained another number (24.20.4)

4.2.5.14 Narrative

4.2.5.14.1 Narrative

The players investigated the address and found a mural painted on the wall (Figure 34).



Figure 34: The Operation Swamp 0000 billboard.

The mural contained imagery relevant to the story of Year Zero:

- Falling angels and a messiah figure
- Pigs that looked like police officers
- Robots with Molotov cocktails

4.2.5.15 Game action

4.2.5.15.1 Link

The image of the robots with Molotov cocktails also provided the players with another number:

- 24.20.3

4.2.5.16 Narrative

4.2.5.16.1 Narrative hook

The mural also led the players to the website, <http://www.operationswamp0000.net/> [Appendix B.31].

4.2.5.16.2 Narrative

Operation Swamp 0000 was a “do it yourself” website that showed citizens how to remove their implanted nerochip. These nerochips were used to track individuals and were implanted underneath the citizens’ skin on the wrist.

The website was very graphic and explained step by step how to remove the chip. The players wondered if these chips were imported by the US from England or the other way around. The players also commented that it appeared that England was better off than the US.

4.2.5.16.3 Narrative hook

The players also found another website, <http://www.operationchipsweep.net/> [Appendix B.32].

4.2.5.17 Game action

4.2.5.17.1 Link

On the Operation Swamp 0000 website the players found yet another number

- 24.20.1

4.2.5.17.2 Narrative

The players who visited the website received a warning that they were accessing “unauthorized feeds” (Figure 35).

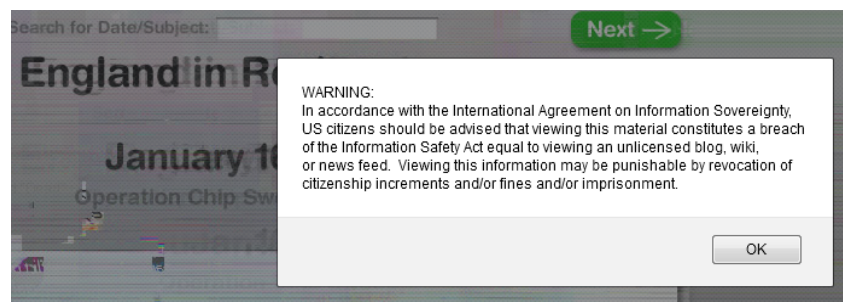


Figure 35: The warning the players received when visiting Operation Chip Sweep.

The website provided information about a planned police raid on the Brixton area in London, England. The police planned to raid the area to find “chip pullers” (the individuals who removed their own chips). The police handled a domestic violence call and two people were killed. This resulted in the residents of the Brixton area to erupting into a riot.

The website did not state if the police or the residents prevailed so the players assumed the residents prevailed. The website also provided another number (24.20.1).

4.2.6 Week 5 (12 March 2007 to 18 March 2007)

4.2.6.1 *Game action*

4.2.6.1.1 **Lead-in mechanism**

On 13th March 2007 NIN released a version of the song “Survivalism” in the popular GarageBand format. GarageBand is a software package created by Apple Inc and packaged with Apple’s iLife software package [Appendix B.33]. This enabled fans of NIN to create their own remixes of the song.

4.2.6.1.2 **Puzzle**

The players found two extra files in the uploaded package which were not part of the original song (Our End Trip and Radio Noise). The players noticed that the first file, Our End Trip was an anagram of “Put In Order” and decided to play around with the audio file. The players succeeded in rearranging the audio file so that the right channel produced a continuous, rising tone. This resulted in the left channel of the audio file playing a voice saying “Case Number 6455da04”. The players tried the case number on US Wiretap but there was no such case. The players attempted the case number on Judson Ogram and found a new inmate file.

4.2.6.2 *Narrative*

4.2.6.2.1 **Narrative reward**

The new inmate file was a story about Moira. She was an Opal addict that claimed that the Presence gave her the ability to “feel the planet”. She claimed she could feel the tides flowing, mountains moving and the air blowing. She told Dr. Gantry that the Presence was not God but an entity sent to “clean up the mess we have made”.

4.2.6.3 *Community*

4.2.6.3.1 **PM with Player interaction**

During week 5 and 6 NIN held listening parties for their fans. These events enabled the fans to listen to the new NIN album, Year Zero, before it was available for purchase. It was during one of these earlier listening parties (the assumption for this study is during week 5) the fans could pre-order the album. With this pre-order, the fans received a lithograph.

4.2.6.4 *Game action*

4.2.6.4.1 **Lead-in mechanism**

The lithograph was of the NIN logo and had the words “The Mailstrom” written in the top left corner. This redirected the players to <http://www.themailstrom.com/> [Appendix B.34].



Figure 36: The first page of themailstrom.com.

4.2.6.4.2 Puzzle

As can be seen in Figure 36 the players were presented with a Username/Password interface but instead of username and password, the players had to enter “wreckage” and “shard”. The players found the logo was clickable.

Clicking on the logo took the players to an information page which explained the reason for “The Mailstrom”.

4.2.6.4.3 Link

When viewing the source, the players found another number set (24.1.1).

4.2.6.5 Narrative

4.2.6.5.1 Narrative reward

The US government controlled all the information the American public received. All the information of the consolidated stream was encrypted and the encryption was for all intents and purposes, unbreakable. The underground of Year Zero, in an attempt to find out what exactly was going through the stream, set up “The Mailstrom”. Rather than trying to crack specific pieces of data by finding an encryption key, “The Mailstrom” used a random generated key and then filtered all the information through these keys. Most of the data passed through “The Mailstrom” without being decrypted, but when the key worked on something, the system stored this “wreckage” that was the result of the collision as well as the “shards” that were extracted.

4.2.6.5.2 Narrative hook

The interface could be used to view these shards. The information page provided the first results of the experiment to the players (wreckage: gallows, shard: Y3RG7J). This specific shard showed how someone who attempted to get out of a shelter to feed their two children was turned in to the authorities.

4.2.6.5.3 Narrative

The background text of the website was extensive and as the players discovered more wreckage / shard pairs, they also discovered more banned media [Appendix B.35]. These books included

- 1984 by George Orwell
- The Crucible by Arthur Miller
- Thus Spoke Zarathustra by Friedrich Nietzsche
- Angels in America by Tony Kushner
- A Beggar At Damascus Gate by Yasmin Zahran

For a more complete list, refer to
[http://www.ninwiki.com/Year Zero Banned Media](http://www.ninwiki.com/Year_Zero_Banned_Media).

4.2.6.6 Game action

4.2.6.6.1 Puzzle

The wreckage/shard combinations could be found in various locations. At the listening parties buttons were handed out. On these buttons there was a single wreckage or a single shard. All the players had to do was to match these buttons together, thereby gaining access to more wreckage/shard pairs.

4.2.6.6.2 Puzzle

The players also found wreckage/shard pairs in audio clips, at various AIR events and inside the Year Zero CD booklet.

4.2.7 Week 6 (19 March 2007 to 25 March 2007)

4.2.7.1 Game action

4.2.7.1.1 Lead-in mechanism

On the 24th of March 2007 a player discovered a PDF uploaded to the Year Zero website of the Survivalism single insert [Appendix B.36]. The document contained some still shots of the Survivalism video as well as the lyrics of the song. In the lyrics one of the words, revisionism, was a link to a new page on Another Version of the Truth, <http://www.anotherversionofthetruth.com/revisionism.htm> [Appendix B.37].

4.2.7.1.2 Puzzle

The page contained a puzzle. The players were met with a timeline of the events of the Year Zero story. Moving the mouse cursor to the left side of the page, the players could drag a layer over the existing timeline. This layer appeared to contain a different timeline but it was very hard to read. Dragging the layer over the original timeline completely, enabled the players to drag another layer from the top of the page. This last layer made the alternate timeline more readable and the players found that this gave a more realistic timeline.

4.2.7.2 Narrative

4.2.7.2.1 Narrative reward

It is relevant to split the discourse here between story and puzzle/mechanism as this new discovered page served as a recap for the players on the events of Year Zero. The events referred to here were the events of the story of the game, not the events of the game itself.

The page, after the puzzle was solved, displayed two different timelines. The one timeline was the events as shown by the US government to the people, where the other timeline showed the events as they actually happened.

4.2.7.2.2 Narrative hook

The listening parties continued through week 6 as well and the players continued to receive wreckage / shard pairs from these events (printed on the buttons handed out at the parties).

4.2.8 Week 7 (26 March 2007 to 1 April 2007)

4.2.8.1 Narrative

4.2.8.1.1 Narrative hook

On the 27th of March 2007 many of the players received an email from the Bureau of Morality. The email indicated that the recipient was viewing web pages that were considered illegal and that he/she may face certain consequences in the future. The email also referred the recipient to a website, <http://www.thepriceoftreason.net/> [Appendix B.38].

4.2.8.2 Community

4.2.8.2.1 System with players interaction

Some of the players attempted to reply to the email and received an auto reply from the system. They were promptly informed that they should not attempt to “explain, justify or deny their actions”. They were also referred to the website, <http://www.thepriceoftreason.net/>.

4.2.8.3 Game action

4.2.8.3.1 Lead-in mechanism

The email also contained, hidden in the body, another number set: 24.5.3. The website also contained a number set: 24.5.1.

4.2.8.4 Narrative

4.2.8.4.1 Narrative

The Price of Treason provided stories of people who committed treason against the government of Year Zero. These stories showed that at any point in time anyone could be arrested and tried for treason for doing the most trivial things. The main point of the site was to display that committing treason had dire consequence.

The website also contained more background text. This time it came from *The Grapes of Wrath* by John Steinbeck [Appendix B.35].

4.2.8.4.2 Narrative hook

In one of the stories, the players discovered a link to another website, <http://www.opensourceresistance.net/> [Appendix B.39].

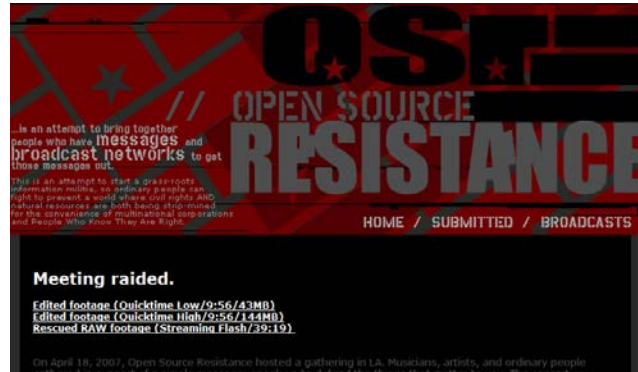


Figure 37: Open Source Resistance looked different from the other Year Zero websites.

4.2.8.4.3 Narrative

Open Source Resistance was a different site than the previous discovered Year Zero website. It did not have the same distorted look as the previous discovered sites (Figure 37). The reason for these differences was that the website dated to -15 in Year Zero time. As the events of Year Zero started in 2022, that meant that Open Source Resistance was created in 2007. This correlated with the time the game took place.

4.2.8.5 Community

4.2.8.5.1 Player with system

Open Source Resistance site encouraged the players to send in their “subversive work or platforms”. These works entailed work that would encourage awareness of the issues that would lead to the events of Year Zero. The players who submitted something received an auto reply message which informed them that their work would be looked at.

The site had a Broadcast section which hosted the works already published in other publications. There was also a mailing list the players could join. The mailing list was used to organize meetings and inform the players of progress on Open Source Resistance.

4.2.8.6 Game action

4.2.8.6.1 Lead-in mechanism

On the 30th of March 2007 some of the players found highlighted letters on the CD cover of the German Survivalism single [Appendix B.40]. The players also found something resembling a barcode.

4.2.8.6.2 Puzzle

Counting the lines in each group of the barcode, the players found a collection of numbers. The players translated these numbers to letters (1 = A, 2 = B etc.) and it spelled CEDACORE. Adding the highlighted letters to CEDACORE directed the players to <http://www.cedacore.com/rswtb/> [Appendix B.41].

4.2.8.7 Narrative

4.2.8.7.1 Narrative reward

The newly discovered page confirmed the suspicion of the players that the US government was behind the manufacturing of the drug known as Opal. So not only did they create Perapin but also created a

debilitating drug. Both the drugs were manufactured by the company known as Cedacore.

4.2.8.8 Community

4.2.8.8.1 Player with Player interaction

During the playing of an ARG, the players generally agreed not to do certain things. They accepted the fact that it was a game (suspension of disbelief), they did not attempt to seek out the puppet masters of the game and they also did not attempt to break the game. Another rule was that players should rather play the game and follow the timing of the game, than try to break into sections of the game and get information before they were supposed to.

The author of the Year Zero guide pointed out that attempting to use brute force methods on websites was not generally accepted. The players of the game again used these frowned upon methods to discover more of the wreckage / shard pairs.

4.2.9 Week 8 (2 April 2007 to 8 April 2007)

4.2.9.1 Community

4.2.9.1.1 Player with player interaction

On the 5th of April 2007 the NIN album, Year Zero, was “leaked” on the internet. There was an auction which sold a physical copy of the CD. The cover of the CD appeared to be different from what was believed to be the original cover. The players also found a sticker on the back of this copy of the CD from the Bureau of Morality.

A player named memorathoner won the auction of the Year Zero CD and received it in the mail. He took photos of the cover of the CD (back, front and inside) as well as the CD and the inside flaps and shared it with the community.

4.2.9.2 Narrative

4.2.9.2.1 Narrative hook

The sticker contained a telephone number as well as some information. The information stated that by calling the number, the individual admitted to having “engaged in subversive acts and thoughts”. The players who called the number at first did not hear a recorded message but could leave a message.

4.2.9.2.2 Narrative reward

Players, who called a short time later, received a message from the Bureau of Morality.

The message stated that by calling that number you were being tracked by the citizen surveillance and that you would be seen admitted for re-education.

4.2.9.3 *Game action*

4.2.9.3.1 **Puzzle**

In one of the songs found on the Year Zero album, Another Version of the Truth, the players found a piece of Morse code. Deciphering the message the players found another website, <http://gracetheteacher.net> [Appendix B.42]. The site contained background text from a banned book. In this case the background text was from Silent Spring by Rachel Carson.

4.2.9.3.2 **Link**

Like almost all the Year Zero ARG sites, the site contained a number (24.8.1).

4.2.9.4 *Narrative*

4.2.9.4.1 **Narrative reward**

Grace the Teacher was a journal kept by a man called Jeremiah Snow. It chronicled his life from childhood, where he and his sister lived on a farm with their parents. They were not drinking Parepin treated water and became more lucid. After an accident with his sister, they had to take her to a hospital where they started to ingest Parepin treated water again. The change in his demeanor was very evident from his writing, from being lucid of the Parepin to attributing his time without Parepin as a “test of faith”.

4.2.9.5 *Game action*

4.2.9.5.1 **Lead-in mechanism**

After memorathoner (the player who purchased the CD) played the CD and ejected it, he found that the black top of the CD had faded to show binary writing on the top of the CD.

4.2.9.5.2 **Puzzle**

The players translated the binary code and found another website, <http://externet.net> [Appendix B.43]. At that point during the game, the website was not yet live. The players only found text: “Pilgrim Stream: 24.7 Data in transit”. The players assumed that it took some time to send the content back in time.

4.2.9.6 *Narrative*

4.2.9.6.1 **Narrative hook**

The players also found another website in the booklet of the CD, <http://www.freerebelart.net/> [Appendix B.44], and like externet.net, the website was also not yet available.

4.2.9.7 *Community*

The externet.net and www.freerebelart.net went live on the 15th of April 2007, two days after the UK release of Year Zero and two days before the international release [Appendix B.45]. Free Rebel Art made use of some very interesting mechanics to get the players to participate and to spread the word even more.

4.2.9.7.1 Player with system interaction	When the player visited freerebelart.net he could see that the website looked the same as the Art Is Resistance website but without the government popup window. The player could enter information into some text fields (name and telephone number) to receive “something to help fight back against this Administration” [Appendix B.44].
4.2.9.7.2 System with player interaction	If the player entered information and pressed submit, he received a message informing him that the password was “resistance”. The player then received a telephone call, if he entered a valid telephone number. Even if the player did not enter anything in the text fields and just pressed submit he would have been informed by the website that all his email, web browser activity and telephone lines were tagged and that the Bureau of Morality would investigate the player.
4.2.9.8 Narrative	
4.2.9.8.1 Narrative reward	During the telephone call the player was greeted by the name he had entered and then asked for the password. If the player said “resistance” a recording played, if the player said anything else, the voice would have said that the password was invalid. If the player said the correct password, a recording informed the player that by calling the number he acknowledged that he was participating in illegal activity, according to statute 24.2.1.
4.2.9.9 Game action	
4.2.9.9.1 Link	The statute the players violated according to the recording was also a number set for the game: 24.2.1.
4.2.9.10 Community	
4.2.9.10.1 Player with system interaction	The player was offered an opportunity to earn back citizen points if he turned in other people who harbored anti-America sentiments. There was a “click here” button which provided the player with a carbon copy email which would result in the person the player sent it to, to fall for the same website.
4.2.9.11 Narrative	
4.2.9.11.1 Narrative reward	After the player sent the mail, he received an email from informer@freerebelart.net , which was actually from the Bureau of Morality. The email contained a reference to another website, www.thepriceofreason.com [Appendix B.38].
4.2.9.11.2 Narrative	The website also contained more background text. In the case of freerebelart.net it was from Stephen King’s Sawshank Redemption.

4.2.9.12 *Game action*

4.2.9.12.1 **Puzzle**

On the 7th of April 2007, after the players listened to a piece of audio from the song The Great Destroyer, a player named dextrago found another website [Appendix B.46]. The website, <http://www.redhorsevector.net/> [Appendix B.47], was hidden inside a distorted voice which required the players to clean up the audio.

4.2.9.12.2 **Link**

The website also contained another number set hidden in the website itself (24.9.2) and another number set hidden inside the video the players found (24.9.1).

4.2.9.13 *Narrative*

4.2.9.13.1 **Narrative reward**

Red Horse Vector was revealed to be a super virus, knowledge of which the government wanted to keep away from the general populace. There was an inoculation available for the virus but it would only be available to higher government officials. This information led the players to believe that Parepin was not the cure all solution that the government was telling its citizens.

4.2.10 **Week 9 (9 April 2007 to 15 April 2007)**

4.2.10.1 *Narrative*

4.2.10.1.1 **Narrative hook**

On the 11th of April 2007, players who signed up on the Open Source Resistance mailing list received an email. This email provided them with a location for a new mural as well as information about a planned meeting. The players were to meet at the new mural's location at 7 pm on the 13th of April 2007 and they should "wear something that shows you are one of us". The email also instructed them to "Stand under the big pig and follow the revolver across the street to the van. Knock twice. When you've got the stuff, get out of there fast. Don't attract attention. Don't be followed." [Appendix B.48].

4.2.10.2 *Community*

4.2.10.2.1 **Player with Player interaction**

The players went to see what the mural contained and to share the information with the rest of the player community. The players discovered the words "One Country at a Time" on the mural which led them to <http://www.onecountryatatime.net/> [Appendix B.49].

4.2.10.2.2 **System with player interaction**

On Friday the 13th of April 2007 the players gathered at the location at 7 pm. This event was later referred to as the OSR LA meeting. Between 50 - 100 people showed up for the meeting (according to the author of the guide). The groups were given different coloured buttons (yellow and grey) by Steve Peters. Steve Peters was the experience design director of Year Zero at that point.

The players were directed to move across the street to the van that stood there. There the players received an ammo box that contained 10

flyers, 10 buttons, 1 marker, 1 hat, 1 bandana, 1 patch, 4 stickers and a stencil. These items were all themed to the “Art As Resistance” images that the players had seen. The players who received yellow buttons when they were handed the buttons by Steve Peters received a different ammo box. The box contained a red cellular phone with a set of instructions. The instructions stated that if the player was over 18 and would be in the LA area on the 18th of April 2007 he should keep the phone charged and with him at all times. If not, he should give the phone and instructions to another player.

The cellular phone was the receiving players’ entrance into a resistance meeting together with one other person. The phone also contained 100 minutes which the players should not use up otherwise the phone would not function anymore.

4.2.10.3 Narrative

4.2.10.3.1 Narrative

The One Country at a Time website that the players discovered on the mural was a story told in a graphic novel format. The website told the story of someone who was contacted by a soldier serving in Syria at that point in time. The story provided details on serving in the military during and after the events of Year Zero, as well as how the soldiers coped.

4.2.10.4 Narrative

4.2.10.4.1 Narrative hook

The buttons handed out at the event of the 13th of April 2007 also contained more wreckage / shard pairs which provided more background story for the game.

4.2.10.4.2 Narrative hook

With the release of the Year Zero album on the 13th of April 2007 the websites, previously mentioned in this case study became active (www.exterminal.net and freerebelart.net). The site www.exterminal.net, contained files from the Extrajudiciary Federal Detainment Camp on Guam where the subversives, dissidents and terrorists had been sent.

4.2.10.4.3 Narrative

In one of the wreckage / shard pairs the players received a link: <http://www.anotherversionofthetruth.com/0>. This provided more story material for the game and provided more clarity on previous events in the Year Zero timeline. Details of this story were not required for this discourse as the way the link was discovered was more important than the story elements (for this study).

4.2.10.5 Game action

4.2.10.5.1 Puzzle

As the players sifted through the files on [exterminal.net](http://www.exterminal.net) they found an audio file that looked similar to the song on the Year Zero album, Capital G. The file, Exhibit A, was actually the inverse of Capital G with very small differences. The players placed the audio tracks over one

another and the sound cancelled each other out. What remained was a Trent Reznor's voice saying "Wreckage is Pain".

The player immediately attempted to place "pain" as the wreckage on The Mailstrom but without a shard they received the following error: "tHere is no daTa associateD with thaT wreckage/shard combiNation. please try agAin".

4.2.10.6 Narrative

4.2.10.6.1 Narrative reward

The capital letters provided the players with the name of the shard thus giving them access to another wreckage / shard pair.

4.2.10.7 Game action

4.2.10.7.1 Puzzle

Another website, viabilityindex.com [Appendix B.50] was discovered in scrambled line code that was found in the Year Zero CD booklet as well as on the flyers from the OSR LA meeting (Figure 38).



Figure 38: The lines found on the OSR LA flyer.

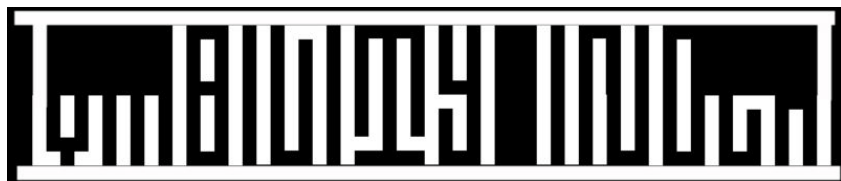


Figure 39: The line code unscrambled spelling out Viability Index.

4.2.10.8 Narrative

4.2.10.8.1 Narrative reward

The viability index was a website created for people who were interested in buying or selling property. Each area was given an index based on climate, toxicity, economic outlook, neighbours and long-term outlook which they called the "viability index". The website sketched a grim picture of the state of certain areas.

4.2.10.9 Game action

4.2.10.9.1 Link

Like most websites discovered in the game of Year Zero, viabilityindex.com contained background text from "The Simple Art of Murder" by Reamond Chandler and another number set (24.06.01).

4.2.10.10 Community

4.2.10.10.1 System with player interaction

On the 14th of April 2007 the cellular phones provided to some of the players began to ring. The players were asked a series of questions by a very stern sounding voice:

- The name of the player
- If the player understood the meaning of the OSR
- Where he was the previous night and why he was there
- If he understood what the phone was for
- Asked to read back the instructions that came with the phone
- Asked if he understood the instructions and urged to take it seriously
- Instructed to keep the phone with him at all times and to expect another call shortly
- Asked if he was bringing a guest and if the guest was over 18

[Appendix B.2]

4.2.11 Week 10 (16 April 2007 to 22 April 2007)

4.2.11.1 Narrative

4.2.11.1.1 Narrative hook

On the 15th of April 2007 the players discovered <http://www.miningforlife.com/> [Appendix B.51] early through Google cache. It was believed that the site should have been discovered through the wreckage / shard pair, Usurp, found on The Mailstrom [Appendix B.52].

4.2.11.1.2 Narrative

Mining for Life was a website for a company called Anglo-Johnson (A-J) which, according to the website, was partially owned by Cedacore. The company was providing food and resources to people in South Africa in exchange for “donations of healthy tissue, corneas, kidneys, blood, bone marrow, and skin”. The benefits appeared to be mostly for people employed by A-J.

4.2.11.2 Game action

4.2.11.2.1 Link

The website again contained a number set (24.22.1) and background text from a banned book (Brazil by Terry Gilliam).

4.2.11.3 Community

4.2.11.3.1 PM with player interaction

On the 18th of April 2007 the players with the cellular phones were instructed to meet at a specific location and wait for a phone call. All the information gathered about the live event on the 18th was from player accounts who had attended the event [Appendix B.53].

At the gathering location the players met with one another and a few minutes after the meeting time, they received the phone call. The players were instructed to go to a parking lot close to where they were

told to gather and to bring their identity documents with them. At the parking lot the players found the area gated and enclosed with black sheets. The players gathered in the corner of the parking lot and were cordoned off with caution tape. They were informed that their cellular phones would be called at which point they and their guests would be checked for recording devices, would be required to fill in a release form (that gave permission for them to be filmed) and then enter a bus with blacked out windows.

After all the players were loaded into the bus (there were between 40 – 50 people present) they travelled to an undisclosed location which took 15 minutes. The players found themselves at an old warehouse where they saw OSR (Open Source Resistance) members standing around outside and on the roof watching them. Some of the OSR members had video cameras that recorded them as they entered the warehouse. Inside they found seats and a stage where they sat down and waited. After a few minutes a game character went onto the stage and started to give a speech about the requirement to question everything and not just follow blindly. The game character was Neil Czerno, the founder of opensourceresistance.net. The players speculated that he was the leader of Art Is Resistance [Appendix B.54].

After the speech the players were led through the warehouse complex (one of the players described it as a labyrinth) to an elevator. Half of the players were shoved inside and the other half had to take the stairs. When the elevator doors opened the OSR members screamed at the players to hurry and move out. The players found themselves in front of a make-shift stage with NIN playing a song.

While the players listened to the concert they were suddenly confronted by SWAT police who attempted to arrest them. The OSR members screamed at the players to “run and get to the bus”. Through the confusion the players succeeded at getting to the bus and were safely returned to their vehicles at the parking lot. Some OSR members made it to the bus as well and told the players to keep the cellular phones with them, keep their eyes open for more murals, graffiti and advertisements. The players discussed the events of the night, took photographs and left for their respective homes.

4.2.11.4 Narrative

4.2.11.4.1 Narrative

According to one of the wreckage / shard pairs the players discovered called flood [Appendix B.55], in Year Zero time, 15 years after the first OSR meeting most of the people who attended “the first meeting” were hunted down and killed or sent to Exterminal (the correctional facility in Guam previously discussed).

4.2.11.5 Game action

4.2.11.5.1 Lead-in mechanism

On the 19th of April 2007 the players found a site called <http://www.actpatriotic.net/> by scanning the subnets of the websites used in Year Zero. The site was not yet live and contained the place

holder text “Pilgrim Stream 24.11. Data in transit” The website went up and down during the last part of the game but never fully went live.

Even though the site never fully went live, it is required to mention it for this discourse to show how the puppet masters respond to the players and how external factors can also influence an ARG.

4.2.12 Week 11 (23 April 2007 to 29 April 2007)

4.2.12.1 Game action

4.2.12.1.1 Lead-in mechanism

During the last part of week 11 the players found new GarageBand files uploaded on <http://yearzero.nin.com/> for three NIN songs; "Capital G," "My Violent Heart," "Me, I'm Not".

4.2.12.1.2 Puzzle

On the 26th of April 2007 a player (ariock) ran the files through a spectrograph and found what appeared to be user avatars from the Echoing the Sound forums in the “Capital G” file [Appendix B.56]. Figure 40 shows an example of the spectrograph.

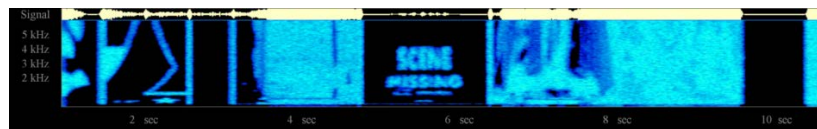


Figure 40: Part of the spectrograph captured from Capital G.

The player soon discovered that the first letter of each username to which the avatars belonged spelled out www.exhibit24.net [Appendix B.57].

4.2.12.2 Narrative

4.2.12.2.1 Narrative reward

The content of Exhibit 24 was a collection of all the websites and hidden pages of the Year Zero game. The website was created by the US Bureau of Morality as a dossier of evidence against a classified individual who the players, at the time of discovery, speculated was Trent Reznor.

With further investigation the players found an inmate on Exterminal who was referred to as [CLASSIFIED] and described as a “dissident musician” and a member of NIN.

4.2.12.2.2 Narrative

All the websites and evidence provided on Exhibit 24 were archived based on a numbering system, which in the end corresponded with the number sets found on the various websites. The numbers were in the format 24.x.x and were each linked to “a piece of evidence” against the “classified inmate”.

4.2.12.3 Community

The last page of Exhibit 24 linked to two lists of individuals. The one list was found to be members from Spiral which was a site used during the

game by players to share and discuss elements of the game. The second list were members of the “Echoing the Sound” forum.

Each individual listed on the site had a number designation attached to him in the format 24.24.x.x. Not all the members of both groups were on the respective lists. The lists showed individuals in various states of observation or capture:

- Marked as deceased
- Marked as “a soft target”
- Held at Exterminal

All the individuals on the lists were considered resistance members and a notice regarding these resistance members read:

“The Resistance Network

These people are intelligent, organized, and highly motivated.

Finding, catching, and destroying them should be a top priority.”

4.3 Grassroots ARG – Number 13 summary

4.3.1 Introduction

Number 13 is an ARG that was run on the campus of the University of Pretoria in April – May 2010. The game was created by a group of post graduate students for a subject that deals with the various elements of ARGs.

Number 13 told the story of a young man who called himself Kael, who was forced by circumstance to search for his sister. Kael’s sister was kidnapped by a secretive group calling themselves the True Light. The players did not know this at the start and only suspected the involvement of the free masons. Kael made the players aware of his problem without having his location revealed to the group called True Light. He achieved this through various challenges that he set for the players to prove themselves to him. When the players had proved themselves, he set them specific tasks to hone their skills in three different fields which he felt were required to save his sister.

The ARG fell within the category of grassroots ARGs and did not have a very big following. The reason for inclusion in this study is that the researcher was involved in the creation of Number 13 and that the process of creating Number 13 provided him with very important insight into the aspects related to this study. This case study will summarize the narrative from the player’s point of view as well categorise events during the game play in the discussed categories.

4.3.2 The rabbit hole – Week 1 (12 – 14 April 2010)

4.3.2.1 Rabbit hole

4.3.2.1.1 Hook

On 12 April 2010 students in the Multimedia degree were informed that a new multimedia website has been uploaded onto the University of Pretoria’s intranet. They were told, by lecturers, that they could visit the website to see the previous year’s final year projects. When the students went to the website, they found that the site was hacked. At first glance the website appeared to be the normal university site the students expected but after a few seconds, strange symbols started to flash onto the screen (Figure 41) as well as strange text (Figure 42).

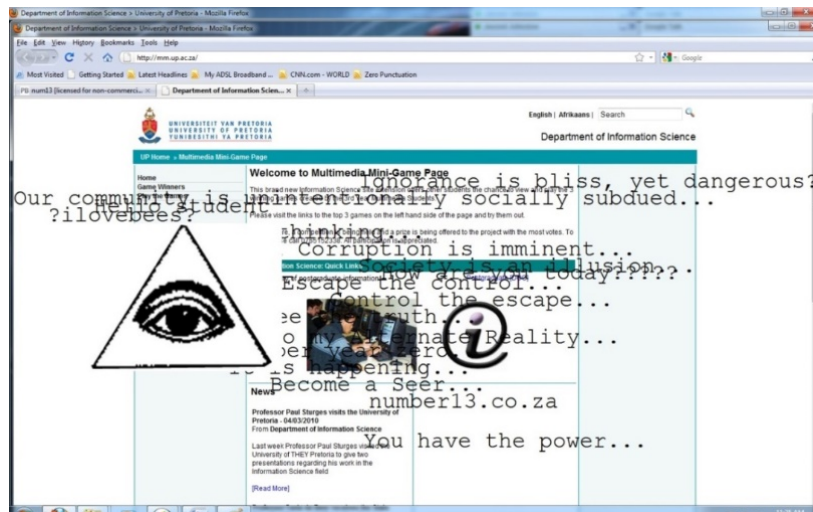


Figure 41: The strange symbols on the "hacked" University website

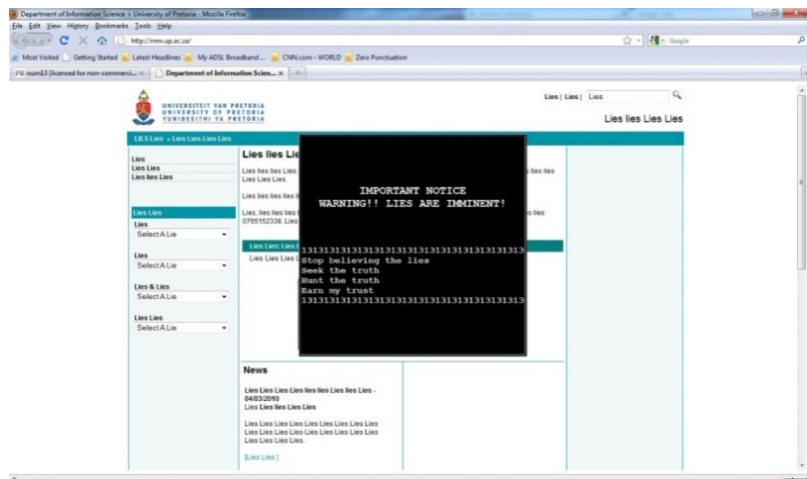


Figure 42: The strange text that appeared on the "hacked" University website.

This text and images were of a Masonic nature. Images like the all seeing eye as well as Masonic propaganda were flashed on the

screen together with other text referring to other ARGs. Words like “i love bees” and “alternate reality game” were flashed in quick succession as well as phrases like “you are being lied to” and “do not believe the lie”.

4.3.2.2 *Rabbit hole*

4.3.2.2.1 **Hook**

On 13 April 2010 students were informed by lecturers that they should not visit the multimedia degree website as it had been hacked. Small posters were placed on the walls in the lecture areas informing students that they should not go to the multimedia website and if they had any information regarding the hacking of the website, they should call a number that was provided on the poster.

4.3.2.3 *Narrative*

4.3.2.3.1 **Narrative hook**

On the hacked multimedia site, after some time, the page changed all the words on the site to “lies” (Figure 43). Clicking on any link on the page took the viewer to www.number13.co.za. At the bottom of the page, the viewer would also find a link to the webmaster of the page.

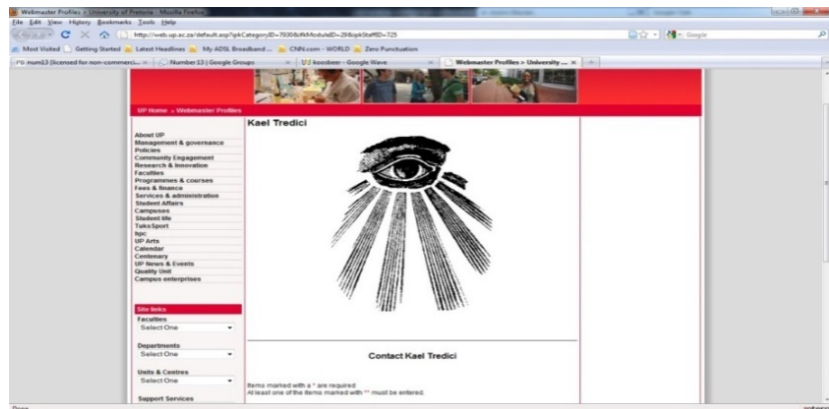


Figure 43: The changed University website.

The name of the webmaster was Kael Tredici (Tredici means 13 in Italian). The webmaster link sent an email to the address kael@number13.co.za.

4.3.2.3.2 **Narrative hook**

The telephone number on the poster that warned students not to go to the multimedia site, played a message when the players called it. The recording sounded like a normal voice message until it was interrupted by a different, stranger message that referred the player to the www.number13.co.za website.

4.3.2.3.3 **Narrative**

The posters and the hacked multimedia website all pointed towards the website, number13.co.za.

On the Number 13 website, the players found a countdown timer. The timer counted down to Wednesday, 14 April 2010 at 13:00.

4.3.2.3.4 Narrative hook

On the main page of number13.co.za, if the players selected the whole page, they found an ASCII all-seeing eye. There were a couple of question marks in the top right corner and when the players clicked it a new mail opened addressed to kael@number13.co.za.

4.3.2.4 Community

4.3.2.4.1 Player with system interaction

The players emailed the address discovered (kael@number13.co.za) and received an auto reply.

4.3.2.5 Narrative

4.3.2.5.1 Narrative reward

The auto reply email contained ASCII art depicting the "Pyramid and Eye" (Figure 44) as well as the text: "Seek the Truth" (Figure 45).

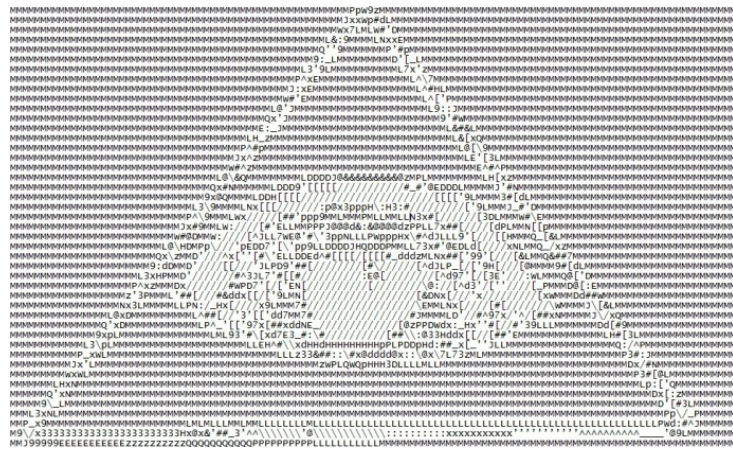


Figure 44: The Pyramid and All Seeing Eye.

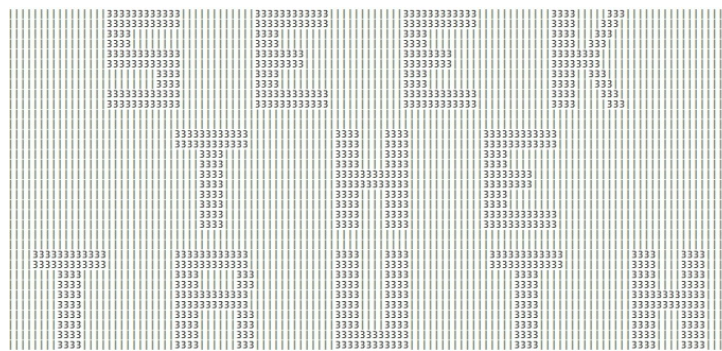


Figure 45: The text "Seek the Truth".

4.3.2.6 Community

4.3.2.6.1 Player with player interaction

The players created a Google group to communicate with one another. From the Google group a wiki evolved called Number 13 (num13.pbworks.com). Players quickly started to post all the information they had gathered so far onto the wiki. The players

appeared to be excited about the countdown timer and to what it was counting down.

While exploring the website the players found various strange symbols and images that were thematically similar to the imagery the players had found up until that point.

4.3.2.7 **Puzzles/Mechanisms**

4.3.2.7.1 **Lead-in mechanism**

The players also found another page that was not linked to any other page, called 13.php. On this page they found a text box with a sentence next to it. The sentence read:

“Find out how deep the rabbit hole goes. What is your n@me seer?”

4.3.2.7.2 **Puzzle**

When the players typed in their email address, a button appeared saying “Enter the rabbit hole”. Clicking the button, a popup box appeared saying “Welcome Alice..” and nothing further.

4.3.2.8 **Narrative**

4.3.2.8.1 **Narrative reward**

Some of the players received an email with an image embedded in it. The image can be seen in Figure 46: An image of an eye the players received via email. Figure 46.



Figure 46: An image of an eye the players received via email.

4.3.2.9 **Puzzle/Mechanism**

4.3.2.9.1 **Puzzle**

The image (Figure 46) contained hidden text. The hidden text was found by opening the image in a text editor.

4.3.2.10 **Narrative**

4.3.2.10.1 **Narrative reward**

The hidden text read:

“IF YOU TRULY WISH TO KNOW THE TRUTH. TEACH THE OTHER SEERS HOW TO FIND THIS TEXT AND TELL THEM TO REPLY TO THEIR MESSAGE WITH THE PHRASE: ‘I WANT TO SEE’”

4.3.3 Week 2 (12 April 2010 – 16 April 2010): The paint event

4.3.3.1 Narrative

4.3.3.1.1 Narrative hook

14 April 2010 at 13:00 the timer on number13.co.za ran out. A video opened up as well as a map of the University of Pretoria with a location marked on it [Appendix C.1]. A summary of the video is provided below:

A highly distorted voice talked about the necessity of the masses to believe a specific message. If the people believed this message (be it the truth or not) then they were just part of the masses. The moment you questioned, you began to stand out and that made you a target. The voice wanted the people to want to know the truth. He instructed people to gather other people and prove themselves to him through a task that he would set for them. He called the viewers seers. At the end of the video he named himself Kael and says that he would be the one that would set them free. [Appendix C.2]

4.3.3.2 Puzzle/Mechanism

4.3.3.2.1 Lead-in mechanism

15 April 2010 at 12:00 players arrived at the location marked on the map. A small poster was placed on the wall telling the players to go to a location close by.

4.3.3.2.2 Puzzle

There they found instructions as well as cans of spray paint. The players were told to go to the “painting wall” on the university campus and spray the URL, number13.co.za, on the wall.

4.3.3.3 Community

4.3.3.3.1 Player with player interaction

The players went to the painting wall and proceeded to spray the letters on the wall. The puppet masters prepared a spot for the players to paint the URL (Figure 47).



Figure 47: Where the players had to paint the URL.

The players gathered at the location (a group of about 20), took turns writing the individual letters of the URL and cheered as the task was completed. The moment the challenge was completed, players received a DVD from an unknown source. The gathered group started to share the DVD, as well as photos taken at the event, with other players. Some players had USB memory sticks with them and some had notebooks so the information was quickly shared among the group.

4.3.3.4 Narrative

4.3.3.4.1 Narrative reward

The reward DVD contained a video from Kael as well as an image of the all-seeing eye. In the video Kael told the players the first part of the story:

Kael revealed why he was doing what he was doing as a reward for the players' proving their loyalty. He talked about a girl that was dear to him. He revealed that he was a student as well, but then a secret society had found out about him. He hinted at ancient rituals performed by "the forefathers" and that these rituals were linked to the disappearance of the girl. He explained that only the true seers would see what was happening and that a "flood" was coming. [Appendix C.3]

The video was placed on the primary website (number13.co.za) at exactly 13:33.

4.3.3.5 Puzzle/Mechanism

4.3.3.5.1 Lead-in mechanism

The DVD was also strangely named with an encrypted word.

4.3.3.5.2 Lead-in mechanism

At 13:33 number13.co.za was updated with the reward video as well as another page. The flood page, as it was referred to by the players, contained several articles [Appendix C.4]. This was the flood that the Kael character talked about in the reward video.

4.3.3.5.3 Puzzle

These articles were encrypted with a cipher. Further investigation led the players to the Caesar cipher after taking a look at the HTML code within the flood page. Every article segment had an ID which was the name of a Roman Caesar. Using the number of the article as the cipher key, the articles were decrypted.

4.3.3.5.4 Puzzle

The players used the same Caesar cipher technique on the encrypted name of the DVD. The name spelt "reward" when it was deciphered.

4.3.3.6 Narrative

4.3.3.6.1 Narrative hook

With the updated site, a new countdown timer was displayed counting down to 21 April 2010 at 13:00 [Appendix C.5].

4.3.3.6.2 Narrative reward

The articles on the flood page [Appendix C.4] contained information about the free masons and their relation to the university campus as well as information about the symbolism used by the masons. The articles established a relation between known masons and the campus of the University of Pretoria. Some of the articles were related to the plot. This included the relevance of the number 13 as well as an explanation of the “Queen of May”. The “Queen of May” article hinted at the possibility of virgin sacrifice.

4.3.3.7 Community

4.3.3.7.1 Player with system interaction

Some of the players contacted Kael via email, explaining that they had solved the article ciphers and that they were “awaiting the truth”. The willingness of the players to participate in the game showed their willingness to believe the fiction of the game.

4.3.3.8 Puzzle/Mechanism

4.3.3.8.1 Lead-in mechanism

On the 17th of April, players found another page on the number13 website. This page was called icu.html and contained a single image, shown in Figure 48 [Appendix C.6]. The image was badly distorted but some of the detail did look familiar to the players.



Figure 48: The distorted image on the icu.html page.

4.3.3.9 Puzzle/Mechanism

4.3.3.9.1 Puzzle

Some players immediately remarked that the size of the image may hint at something being hidden inside it. The players made multiple attempts to decipher the image. These attempts included manipulation of the colours in the image, editing the layers and investigating anomalies with the image format (.png in this case). More advanced attempts were made to discover what was hidden in the image such as attempting to detect the use of steganography and opening the image as an archive. There were no successes with the ICU puzzle during this week.

4.3.4 Week 3 (19 April 2010 – 23 April 2010): Picture/Location hunting

4.3.4.1 Community

4.3.4.1.1 System with player interaction

The ICU puzzle remained unsolved this week. The players ceased investigation and no progress was observed on the wiki. The puppet masters updated the ICU page with a hint, placing two Greek words at the top of the page which read στεγανός and γράφειν. These words mean air-tight or protected (στεγανός) and write (γράφειν) when placed in the Google translator.

4.3.4.1.2 System with player interaction

Later that week, the puppet masters placed another hint. This time there was a diagram of some sort (Figure 49).

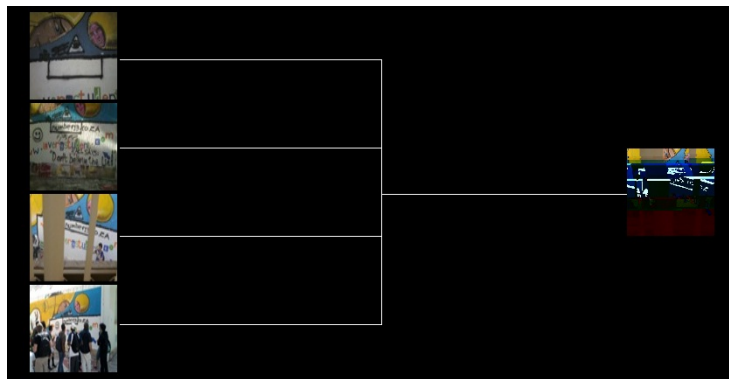


Figure 49: The diagram hint placed on the icu.html page.

With this clue, the players first assumed that Kael had provided them with the answer. They thought that the original ICU image (the one on the right in Figure 49) consisted of the combination of the four images on the left.

4.3.4.2 Puzzle/Mechanism

4.3.4.2.1 Puzzle

Soon after the players discussed this theory, another clue appeared on the ICU page (Figure 50).



Figure 50: The second clue placed on the icu.html page.

Based on the clue in Figure 50 the players assumed that the equation may have been a series of image editing techniques that they needed to apply to the various images. This in turn would have yielded a

result. Other players maintained that steganography was definitely used with the image.

4.3.4.3 Community

4.3.4.3.1 System with player interaction

Another clue was provided by the puppet masters during this week. A sentence on the main page of number13.co.za said:

*“Before the four questions there was the FIRST question. to understand the WHY you have to look inside the FIRST question.
To look inside the FIRST question, you must OPEN the four windows that lead to the FIRST/ONE window”*

4.3.4.4 Narrative

4.3.4.4.1 Narrative hook

On 21 April 2010 the countdown timer ran out and a new instruction video and map location opened for the players [Appendix C.7]. The instruction video provided more information about the problem Kael was having:

The video started off with a recording of the players completing the previous challenge. Kael was watching them. He called them all seers and elaborated by explaining their actions (watching the video and completing the previous task) enabled them to see the truth. The images in the video hinted at a link between the University, the masons and the events of the game. Kael explained that daily the players were bombarded by images that they did not necessarily see but that they subconsciously processed. Kael explained that to construct an effective offensive, the players required three things: intelligence, observation and force. He explained that every week’s challenge would be related to one of these fields and that leaders would be picked from the players for each field. When the leaders were chosen, they would be ready for the final assault. The current assignment required the players to work together and use their intelligence to solve the puzzle. [Appendix C.8]

The map location pointed to a sundial, mounted in front of one of the buildings on the university campus. The time for the gathering was 22 April 2010 at 13:33.

4.3.4.5 Puzzle/Mechanism

4.3.4.5.1 Lead-in mechanism

On the flood page, four new articles were added.

4.3.4.5.2 Puzzle

These four articles, when decrypted contained more mason-related information as well as URL links to four different pages on

number13.co.za. Each page contained instruction from Kael telling the players to solve the puzzles [Appendix C.9]–[Appendix C.12].

4.3.4.6 Narrative

4.3.4.6.1 Narrative

Later in the game, each of these pages also received a “story link” which contained a fictional story of a master and his student. These stories attempted to provide the players with hints to solve the puzzle but in the end, these four puzzles were not solved.

4.3.4.7 Community

4.3.4.7.1 Player with player interaction

The four puzzles had the community truly stumped. Many attempts were made based on different computer science techniques. No progress was made on these puzzles. The puppet masters also weren’t forthcoming with any clues.

4.3.4.8 Puzzle/Mechanism

4.3.4.8.1 Lead-in mechanism

On the 22 April at 13:33 the players gathered in a group at the sundial. At 13:33 exactly the players received an envelope.

4.3.4.8.2 Puzzle

Within the envelope the players found 4 pictures of locations as well as an instruction letter. The instruction letter simply stated:

“Gather the seekers and find pieces”

At this point, the players decided to split up into groups and go to the four different locations pictured. At each of the locations, the players found another envelope. After retrieving the four envelopes the players convened at the sundial again to view what they had found.

4.3.4.9 Narrative

4.3.4.9.1 Narrative reward

Within each envelope there was a letter from Kael explaining why the specific location was important. There was also a password that the players needed to send to Kael when they retrieved the letters. On number13 there was a tracker for the 4 passwords, when all 4 passwords were received, a reward video opened up.

Kael commended their group effort in solving the event and revealed more information. He explained that the page they received was a recreation of something he had found which would provide them with more information about the masons. He explained that locked within the page there were secrets that they must unlock by working together and talked about them being a “collective detective”. He explained the reason for his messages being so cryptic. He did not want the casual onlooker to understand what was going on and only wanted the seers to be able to decipher his words. He mentioned the

leaders again as well as the rescuing of the girl. He said time was running out. [Appendix C.13]

Each envelope also contained a piece of a page that looked aged. When the four pieces were put together the page read as a piece of mason propaganda, providing more information about the masons and how their power structure functioned.

When the reward video came up, a new timer also appeared, pointing to 28 April at 13:00.

4.3.5 Week 4 (26 April 2010 – 30 April 2010): “Have you seen her?” puzzle hunting

4.3.5.1 Community

4.3.5.1.1 Player with player interaction

Early in the week, a player made a breakthrough with the ICU puzzle. While playing around with the four images he discovered code files archived within the images. Opening the images with 7zip (an archive tool) provided the player with 4 different files. He shared his revelation with the other players.

Within an hour, the code files, that turned out to be java files for a steganography program, were compiled and the ICU image was deciphered. The ICU image contained the story of Kael’s sister.

4.3.5.2 Narrative

4.3.5.2.1 Narrative reward

The ICU image revealed that Kael’s sister was kidnapped in December 2009. After waiting for the police to find his sister, Kael decided to start investigating the disappearance himself. He found clues that the kidnapping was linked to some secret society. While digging for more information, Kael was found by the secret organization and he then decided to go into hiding while still trying to search for his sister.

4.3.5.2.2 Narrative hook

The timer on number13.co.za ran out on the 28th of April 2010 [Appendix C.14]. A new location and time was revealed for the players to gather; Thursday 29 April at 12:00. Kael also provided the players with another instruction video.

Kael again talked about the three fields. He informed he players that he would continue to test them on the fields to save “her”. He then talked about the masons. He revealed that anyone could be a mason and they were not necessarily an evil organisation. Kael explained that assuming all masons were evil was foolish. He explained about a separate sect within the masons called True Light. The players’ next challenge would be a challenge in observation. The players must keep their eyes open and weigh his words carefully. Kael explained that everything he said ha meaning and that

he had to become like “them” (referring to the masons) to hide the message within a message. [Appendix C.15]

4.3.5.3 Puzzle/Mechanism

4.3.5.3.1 Lead-in mechanism

Gathering on the 29th April in front of the University library museum, the players again found instructions waiting for them.

4.3.5.3.2 Puzzle

They needed to find 25 posters on the university campus. These posters contained a distorted image of Kael's sister, a roman numeral written in the corner, a puzzle piece and the words “Have you seen her”. The players had to take a picture of the poster when they found it, and send it to Kael via email or MMS.

4.3.5.4 Community

4.3.5.4.1 System with players interaction

As Kael received the images, he updated a grid on number13.co.za website with the images the players sent him. These images Kael uploaded to the number 13 website were distorted. Opening the distorted images with a text editor revealed snippets of story within each image. Putting all 25 individual snippets together formed another piece of the story.

4.3.5.5 Narrative

4.3.5.5.1 Narrative reward

Kael found out how the True Light, which is the sect of the masons, found his sister. They contacted her through her Facebook profile. In order for Kael to find out this information, he had to create a fake profile and by doing this, Kael was born. Kael found that the group called True Light was connected to the masons. This group's representative was the last person to speak to Kael's sister. Kael was also sure that the group called True Light were the ones who had taken his sister.

In the story the players also found out how attached Kael was to his sister and the influence her kidnapping had on him and his family.

4.3.5.6 Community

4.3.5.6.1 System with player interaction

At the time of the gathering, very few players showed up. One of the players (the one who solved the ICU puzzle) was contacted by Kael and provided with the instructions for the event. He was also instructed to give the instructions to the players at 13:33 exactly. He received the following email before the event:

*“You've proven yourself worthy Aegis. You'll find the instructions; you must deliver them to the location at 13:33, no later, no earlier.
My name is Kael. You know the truth.”*

<p>4.3.5.6.2 Player with player interaction</p>	<p>Based on player feedback, many of the players were unable to attend due to University responsibilities. Of the small group who attended the meeting, many said that they were unwilling to go on a treasure hunt. The players then divided up into two groups and left.</p>
<p>4.3.5.6.3 System with player interaction</p>	<p>Kael was very disappointed with the number of players present and sent them all an email and SMS:</p> <p style="text-align: center;"><i>“I thought you wanted to see. I thought you wanted to know who I am. Where were you?”</i></p>
<p>4.3.5.6.4 Player with player interaction</p>	<p>Two specific players chose to go hunting for the posters and followed the instructions. As they found the posters, they took photos and sent them to Kael via MMS. The players had a hard time finding the posters as one player had seen the posters earlier in the day and had collected them. That evening that specific player took a picture of all the posters put together and emailed the images to Kael.</p>
<p>4.3.5.6.5 System with player interaction</p>	<p>Kael again chose to contact the community with an email and SMS:</p> <p style="text-align: center;"><i>“Seers, you have achieved the goal I have set before you. The how is not important but that you did it is! The next challenge will require you to use force. Force of words, forceful spread of information, forcing people to listen!”</i></p>
<p>4.3.5.7 Narrative</p>	
<p>4.3.5.7.1 Narrative reward</p>	<p>After this email, the reward video was released.</p> <p style="text-align: center;"><i>Kael commended the players on their ability to solve the observation puzzle. He told the players that the reward they had received contained more detail of his life and what was happening. He also hinted at hidden information within their reward. Kael explained that the next test would be the last field, after which the final assault would commence. The players must solve the four puzzles Kael gave them before the final event. He would watch them and help if necessary.[Appendix C. 16]</i></p>
<p>4.3.5.8 Puzzle/Mechanism</p>	
<p>4.3.5.8.1 Puzzle</p>	<p>The players constructed the 25 different pieces of puzzles to form the second page of the mason related propaganda book. Hidden within the page players found snippets of Morse code that had to be aligned correctly and then be deciphered.</p>

4.3.5.9 Narrative

4.3.5.9.1 Narrative reward

The Morse code on the second page of the mason propaganda provided the players with more information about the True Light group. It was clear that True Light hid within the masons.

A new timer appeared on the website counting down to the next week Wednesday.

4.3.6 Week 5 (3 May 2010 – 7 May 2010): The lie

4.3.6.1 Narrative

4.3.6.1.1 Narrative hook

On Tuesday 4 May a new video and timer opened on the site. The new timer counted down to Thursday 6 May 18:00 and the location was the Piazza on the University campus [Appendix C.17]. The new video provided the players with the instructions they needed for the next event:

The final field was “force”, not physical force, but numbers. Kael wanted the players to get as many people together as they possibly could for the final event to show True Light that they could not hide any more. He explained that observation and intelligence was not enough on their own but require force. He asked the players to bring recording devices to record the historic event. The players’ success in this event would be judged by the number of people they got to show up for the event. [Appendix C.18]

4.3.6.2 Community

4.3.6.2.1 System with player interaction

Kael informed the players that a new timer and video was available on the number 13 website.

*“Time has changed, preparation for the final assault has commenced.
number13.co.za
My name is Kael and.”*

Four specific players were contacted Thursday morning via email informing them that the location had changed and that they must meet at the phone booths close to the Piazza area. The address these new emails came from was not Kael’s normal email address.

4.3.6.3 Puzzle/Mechanism

4.3.6.3.1 Lead-in mechanism

At 18:00 the four players, who were informed separately via email to meet at the payphones, were contacted by a person claiming to be Kael.

4.3.6.3.2 Puzzle

They were told that the event was compromised and that they should gather the other seers from the Piazza and be at a new location at 18:00 sharp. The players found the phone call strange due to the fact that Kael never contacted the players directly and preferred to hide his voice in the videos. The players then made a run for the new location (the entrance of the Law building on the University of Pretoria campus).

At 18:30, while the players were waiting for something to happen, a person showed up claiming to be Kael. He told the players that they had done well with all the tasks that he had set for them but that their efforts were no longer necessary. His sister had been found and they did not need to worry any more.

4.3.6.4 Community

4.3.6.4.1 Player with system interaction

At first the players did not say anything to Kael or talk to him, but after some encouragement they started to ask him questions. They asked him questions like “What is the truth” and things that only he was capable of answering. He avoided all the questions by saying that they did not need to worry any more, his sister had been rescued. One of the players confronted him and asked if he could call her so they could ask her themselves.

4.3.6.5 Narrative

4.3.6.5.1 Narrative reward

A loud siren sounded while the players were waiting for Kael to make the call. A video was projected on the side of the Law building with the signature Kael voice telling the players that the Kael they saw before them was not the real one. While all the players’ attention was focused on the side of the building, the fake Kael slipped away.

The video included various revelations:

The video started off with a siren blaring loudly to draw the players’ attention. Kael spoke to the players and said that the person claiming to be him was an agent of True Light. He commended the players for each of the fields and the video showed the names of some of the players who were involved in the various fields. He asked the players to make public the footage they had taken and to share the information. He explained more about True Light; they were extremists within the mason society, they would attempt a virgin sacrifice and his sister would be that sacrifice. He informed the players that leaders would be identified and these leaders would inform the rest of the players what to do in the final event. The last step would be up to the players. The final assault had begun. [Appendix C.19]

4.3.6.6 Community

4.3.6.6.1 Player with player interaction

Due to the splintered nature of the community playing the game, some players were left behind during the rush to get to the new location. One player posted on the wiki that he was at the Piazza locations for 10 minutes and nothing happened.

The event was supposed to be a large show of force by the players but in the end, only a small handful of players were at the final location. This was again due to University responsibilities as well as the lack of communication between the players. The players who did attend found the event very interesting and enjoyed it immensely.

4.3.7 Week 6 (10 May 2010 – 14 May 2010): The ritual

4.3.7.1 Community

4.3.7.1.1 System with players interaction

After the events of the previous week, there was no countdown timer on the number 13 website. The players had received an email from Kael the Friday of the previous week informing them that the fake Kael had been spotted on campus and that the players should keep their eyes on him. They needed to inform Kael if they spotted the fake Kael, via SMS or emails and they could even send him pictures of his fake counterpart.

4.3.7.2 Narrative

4.3.7.2.1 Narrative hook

On the Wednesday evening, 12 May, the players received an email from Kael. He informed the players that following fake Kael was the only way for the players to discover the location of the ritual True Light was planning to perform. He had also found out that fake Kael frequented a specific location every day on campus at a specific time. Kael wanted the players to follow fake Kael on that day at that time until they reached his final destination. The number 13 website also received an update: the email the players received was ciphered with the number 13 and placed on the main page. The date of the final event was also placed on the main page [Appendix C.20].

4.3.7.3 Puzzle/Mechanism

4.3.7.3.1 Puzzle

Kael identified three players to be in control of the three different fields he mentioned throughout the play of the game. These three players were informed individually by Kael via email of their task; they had to coordinate three different aspects of the surveillance of fake Kael.

The players had to meet at a specific location where one of the leaders informed them how the surveillance would be done (leader of observation). Another leader identified by Kael took control of the communication of the group (leader of intelligence) and a third leader was responsible for the group to gather when they found the final

location (leader of force). The players were also informed to record everything that happened during the final assault.

4.3.7.4 Community

4.3.7.4.1 Player with player interaction

The players arrived at the meeting location and the observation leader decided that they should all wait at a specific location. A small group would be sent after the fake Kael to follow him and communicate with the larger group. This was done to avoid detection of the players; Kael instructed the players that under no circumstances were they allowed to confront fake Kael or be spotted by him.

During the surveillance the leader of intelligence instructed the players responsible for following fake Kael, to SMS him with updates of fake Kael's movements. The leader of force was also involved in keeping the players communicating. During the surveillance the players were also in contact with Kael. The players continuously updated Kael on their progress.

4.3.7.5 Narrative

4.3.7.5.1 Narrative reward

Fake Kael walked through several of the locations involved in previous events and made notes at each. He finally arrived at a location where he was met by a robed individual. The players contacted the rest of the group and gathered for the final assault.

As the players moved through a long and dark corridor, chanting was heard above the noise of air conditioners and water pumps. The hallway was edged with burning candles. At the end of the long hallway the players came across a large room where a symbol, which was later confirmed to be the symbol of True Light, was drawn on the floor with a body shape lying under a black covering in the centre of the symbol. Eight robed figures stood on the edge of the symbol facing the body and they were the source of the chanting.

On investigation the players found that the body shape in the centre of the symbol was sweets and cold drink covered by a black robe; the chanting figures were the puppet masters of the game.

5 Chapter 5 – The analysis

5.1 Introduction

Chapter 5 contains the analysis of the summaries. Each game was categorised using constant comparative analysis. Each category and subcategory is provided with a symbol representing it. These symbols are then used to lay out the events of each week within each game in an abstract representation of events and actions.

The legend for the symbols and their respective categories and subcategories can be seen in Figure 51.

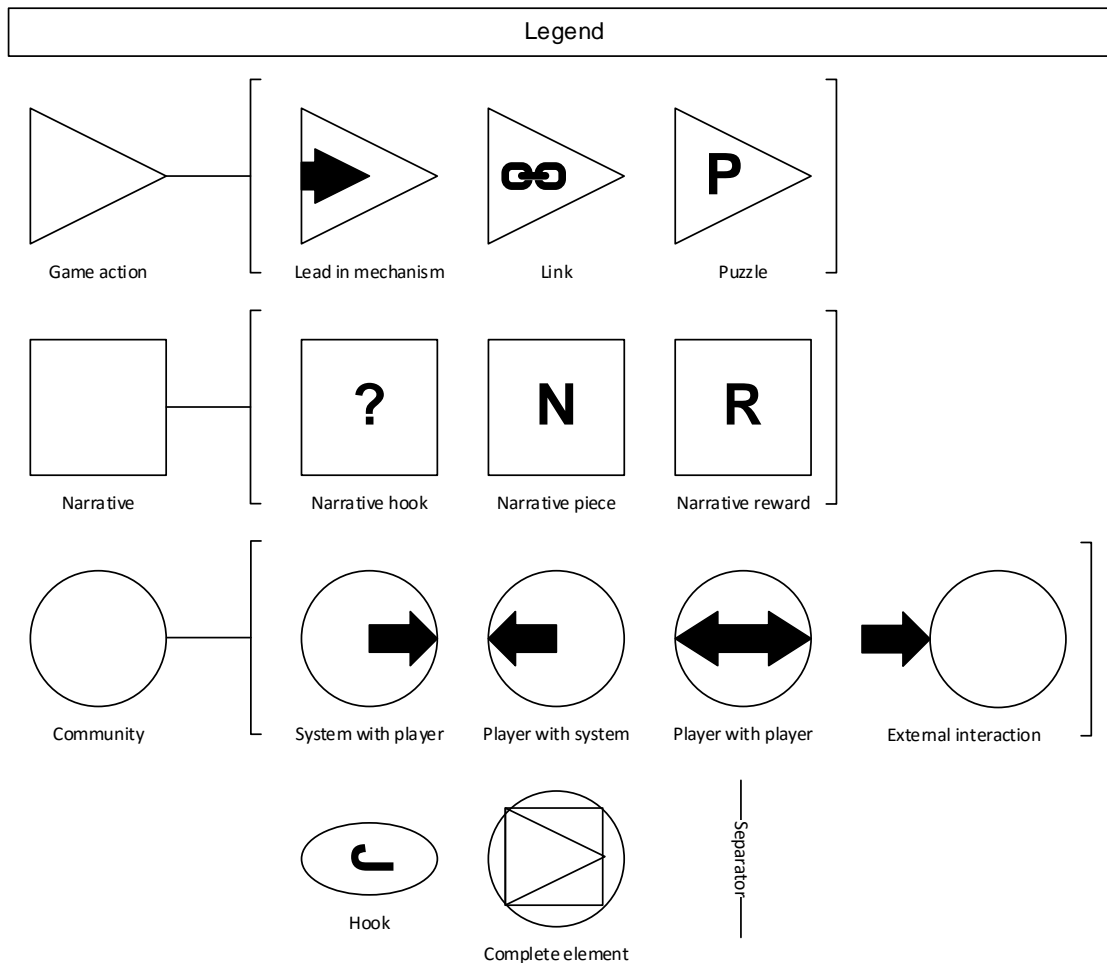


Figure 51: The legend for the categories and subcategories.

The categories and their subcategories were explained in chapter 3 and was a result of the analysis of each of the game summaries. Each week is described in the form of a diagram. The diagrams contain elements that correspond to categories and subcategories (as described in Chapter 3). The elements are representations of phenomena identified in the game summaries. The phenomena can be categorised or sub categorised based on the identified categories and subcategories criteria.

The diagram as representation shows how the phenomena interact with one another specifically the relationships between the phenomena. The separators found in the diagrams are placed as a break between a collection of phenomena and their relationships. The separator can also serve as a time based break. For example: during the narrative flow of the summary phenomena are identified one

after the other. Some of these phenomena are directly linked to one another. Others are only linked to phenomena identified later in the narrative flow. A separator will be placed between the groups of phenomena based on where they were identified in the game summary. Specific phenomenon can link “over” a separator to an adjacent phenomenon. This can occur because the phenomena were identified in separate sections of the game summary but are linked to one another.

To understand the sequence of the numbered phenomena, the previous chapter must be considered together with how the phenomena were numbered in the game summaries. As the phenomena are identified in the game summaries they are provided with numbers. During the creation of the diagrams, the relationships between the various phenomena were described in visual format thus the numbering may be out of sequence.

In the diagrams, unnumbered phenomena may occur. The diagram may contain explicit mentioning of a certain phenomenon in one case and in another case the phenomenon may not be explicitly mentioned. This is again because of the way the game summaries were created. During the narrative flow of the summary the researcher may explicitly mention something that can be identified as a specific phenomenon and placed in a category or subcategory. In another case the phenomenon is implied but not specifically mentioned. When the occurrence of the phenomenon is of importance in terms of the diagram and the relationships between the elements, an element will be placed and labelled as “unnumbered”.

It is also important to explain the usage of the “complete element”. During the game summary a series of events can be described in a single sentence. The sentence may contain the lead-in mechanism, the puzzle as well as what reward the players received. Rather than divide the single sentence into three separately numbered sections, it is marked as a “complete element”.

Finally, the diagrams are representations of a series of events within a specific week during the game. The events represented within the diagram are then placed together based on their relationships and how they link to one another. This results in the diagram not representing the chronology of the events but rather the structure of the events and how they relate to one another. Each diagram is encapsulated between two dates and is labelled as a specific week. The diagram should be read as an abstract representation of the events and their relationships.

During each game’s analysis, the diagram will be provided for each week. The phenomena used to construct the diagrams are referenced by a number. These numbers correspond to the respective game in chapter 4 as well as the phenomenon that is being addressed. For more context, refer back to the specific number in chapter 4.

5.2 Production ARG – “I Love Bees”

5.2.1 Introduction

“I Love Bees” was the largest of the ARGs analysed for this study. The game ran for sixteen weeks. The player community was targeted firstly from the existing pool of ARG players but later added the fan base of the Halo games. The community grew rapidly from there. “I Love Bees” had a strong narrative focus but, more than the other analysed ARGs, required the players to collaborate and complete power plays. The collaboration and willingness of the community was the linchpin in the game. Through the player actions and physical activity, the community gained access to narrative pieces which they in turn constructed into the narrative flow. The game actions required expertise including cryptography and web-based technology.

The numbering in the diagrams refers back to chapter 4. The following sections’ numbering in the diagrams requires the prefix 4.1 (see Chapter 4 – 4.1).

5.2.2 Week 0 (13 July 2004 – 20 July 2004)

The diagram in Figure 52 shows the representation of the rabbit hole and pregame information (Week 0) of “I Love Bees”.

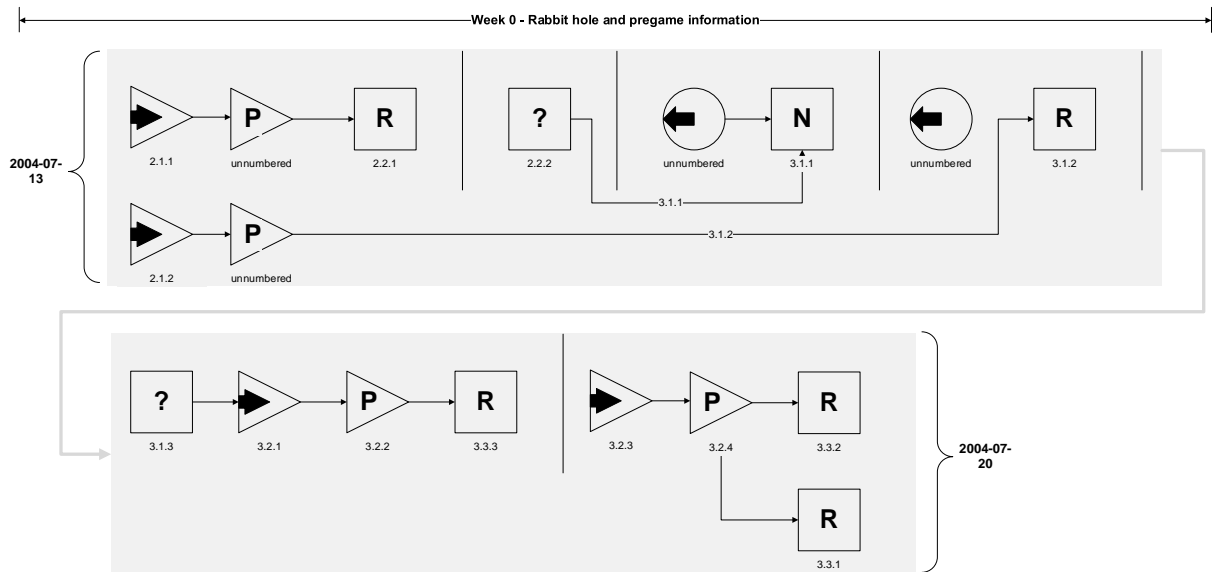


Figure 52: Week 0 (13 July 2004 – 20 July 2004).

The rabbit hole of the game was discussed in the categorisation in Chapter 4 – 4.1. The rabbit hole targeted existing ARG community and allowed them to get a head start on the other potential players. The analysis started at the point in Chapter 4 – 4.1 where the players arrived at the primary game website.

Investigating the website, the players found two lead-in mechanisms (2.1.1 and 2.1.2). The first lead-in mechanism (2.1.1) led them to a narrative reward (2.2.1). Both the phenomena (2.1.1 and 2.1.2) were categorised as a lead-in mechanism because it wasn't narrative content but specifically led the players to investigating the source code of the website as well as the digital content of the images. This phenomenon was used throughout the game, directing the players to puzzles. In the case of 2.1.1 and 2.1.2 the lead-in mechanisms pointed to puzzles that were not explicitly mentioned in the game summary. The players did have to solve certain problems to get from the lead-in mechanism to the narrative rewards. In this scenario, the puzzle elements are implicit.

The players also found a narrative hook (2.2.2) in the form of a system with player interaction (unnumbered). This phenomenon was categorised as a narrative hook first as it provided the players with starting context which resulted in a narrative piece being discovered (3.1.1). The other lead-in mechanism (2.1.2) directed the players to a narrative reward (3.1.2) which provided the players with context of why that phenomenon existed. The phenomenon was also facilitated with a system with player interaction, even though it was primarily categorised as a lead-in mechanism (2.1.2).

The puppet masters provided narrative to the players through game characters at this point. The system provided the players with a narrative hook (3.1.3) which resulted in the players searching through the game content so far, leading to the discovery of a lead-in mechanism (3.2.1). The lead-in mechanism (3.2.1) pointed to a puzzle (3.2.2) which resulted in a narrative reward (3.3.3).

The investigation by the players led them to a lead-in mechanism (3.2.3) which was similar to the lead-in mechanism mentioned earlier (2.1.1). This mechanism pointed to a puzzle (3.2.4), and solving the puzzle, provided the players with two pieces of narrative as reward (3.3.2 and 3.3.1).

The first week (Week 0) of “I Love Bees” established narrative context and provided the players with more questions than answers. The puppet masters also set up the type of puzzles and interaction the players could expect. All of the game actions were hinted at through narrative content and character interactions.

5.2.3 Week 1 (20 July 2004 – 27 July 2004)

The diagram in Figure 53 shows the representation of Week 1 of “I Love Bees”.

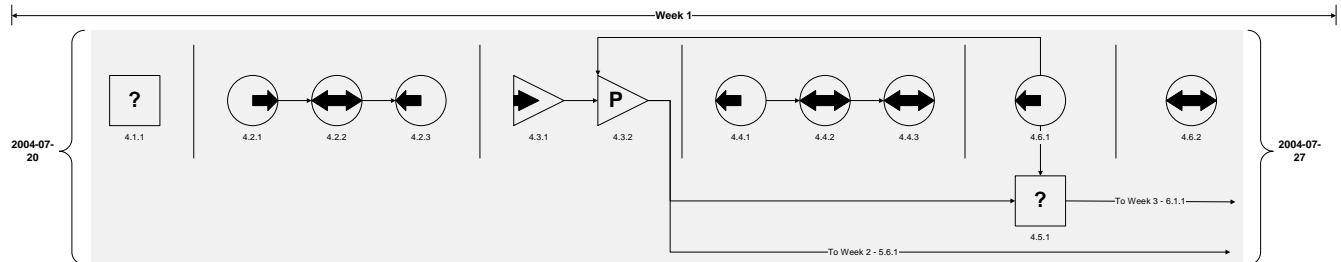


Figure 53: Week 1 (20 July 2004 – 27 July 2004).

Week 1 of the game started with another narrative hook (4.1.1) released to the players by a game character. The narrative hook (4.1.1) referenced the lead-in mechanism (2.1.2) of Week 0. This phenomenon led to the players to investigate the provided content in even more detail.

A unique occurrence in “I Love Bees” (compared to the other ARGs used in this study) occurred in this week of the game. Because the puppet masters targeted an existing ARG player base, these players set up infrastructure to deal with new players entering the game during its play. The community activity was also pushed by a system with player interaction (4.2.1). The result was a player with player interaction (4.2.2) which produced one of the primary channels of communication for the players. Maintaining the belief that the game characters are “real” (ludic attitude), the players contacted the game character and invited her to participate in the channels (4.2.3).

The system provided the players with a lead-in mechanism (4.3.1) that led them to a puzzle (4.3.2). The players participated in the puzzle (4.3.2) but only received confirmation of the solution in Week 2 of the game (4.3.2 is linked to a narrative reward – 5.6.1 in Week 2). A narrative hook (4.5.1) discovered in Week 1 did confirm the players’ theory about the puzzle (4.3.2). The system with player interaction (4.6.1) resulting from the narrative hook (4.5.1) confirmed the player theory. The narrative hook (4.5.1) links to a narrative reward in Week 3 (6.1.1).

Continuing the unique nature of the community creation of “I Love Bees”, the players contacted the game character (4.4.1) to enquire about an external link to the game primary site. This communication resulted in a player with player interaction (4.4.2) that resulted in the player establishing more narrative context. The existing ARG player community continued to interact with the game content and one another (4.4.3) to establish similarities between previous ARGs and “I Love Bees”. The puppet masters relied heavily on the existing ARG players to establish the community faster than usual. Because of the focus on the existing ARG community, with the events of the player with player interaction (4.6.2) the community was able to assimilate new players new to the ARG genre making them effective ARG players within a very short time.

5.2.4 Week 2 (27 July 2004 – 3 August 2004)

The diagram in Figure 54 shows the representation of Week 2 of “I Love Bees”.

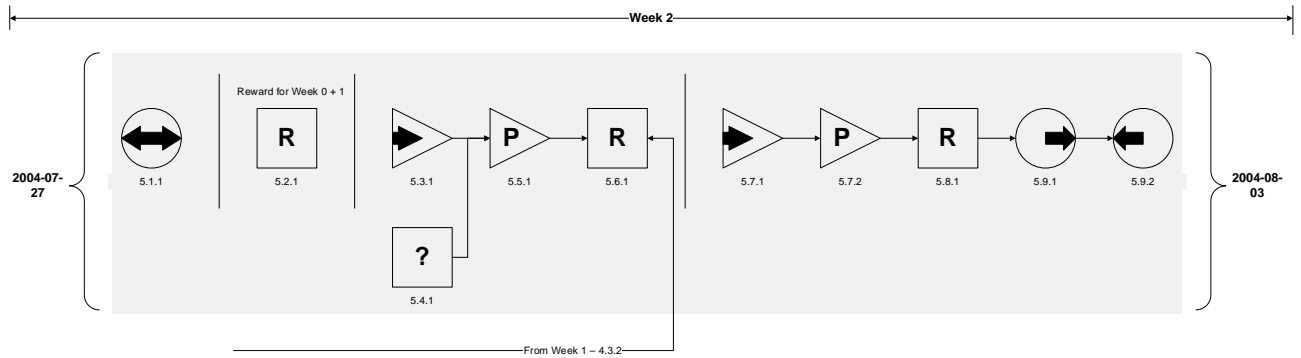


Figure 54: Week 2 (27 July 2004 – 3 August 2004).

Week 2 started off with the player community awaiting the timer (mentioned in Week 0 as 2.1.2 and Week 1 as 4.1.1) to run out on the forum. Debate in the community is an example of the existing ARG community sharing “the way things was” with the new ARG players of the “I Love Bees” community. With the timer running out the players were rewarded with a narrative reward (5.2.1). The reward also entailed a site wide update which resulted in more lead-in mechanisms being discovered.

A lead-in mechanism (5.3.1) provided some interesting narrative (narrative hook – 5.4.1) as well as led to a puzzle (5.5.1). Solving the puzzle rewarded narrative (5.6.1). The narrative reward (5.6.1) also linked back to the puzzle in Week 1 (4.3.2) and was a culmination of the players solving that puzzle (4.3.2) and the puzzle (5.5.1) found in this week.

Because of the narrative reward (5.2.1) another lead-in mechanism (5.7.1) was discovered, leading the players to a puzzle (5.7.2). The solution to the puzzle provided the players with a narrative reward (5.8.1). The narrative revealed in this reward sparked a system with player interaction (5.9.1) as well as resulted in the players directly interacting with the system (5.9.2).

Week 2 made more evident the existence of a game character being “pulled along like everyone else”. The game character reacted, as did the players, with content uncovered and solved during the week. The players were interacting with the system (in the form of various “story characters”) and with a victim of the events (which was also a game character) but in effect, they were interacting with the game on various levels. The puppet masters made use of the strong community they created by combining an existing ARG community as well as a large group of fans (who were new to ARGs).

5.2.5 Week 3 (3 August 2004 – 10 August 2004)

The diagram in Figure 55 shows the representation of Week 3 of “I Love Bees”.

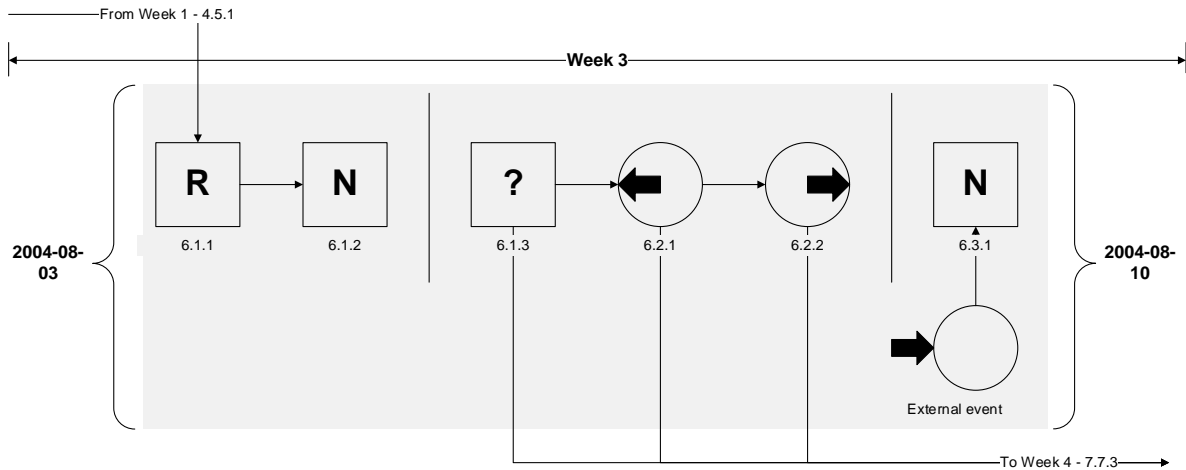


Figure 55: Week 3 (3 August 2004 – 10 August 2004).

Week 3 started with a narrative reward (6.1.1) as a reward for participating in the narrative hook (4.5.1) from Week 1. This narrative reward (6.1.1) contained a narrative piece (6.1.2). In the narrative content discovered by the players, another game character produced a narrative hook (6.1.3) which led to the players directly interacting with the system (6.2.1) as well as the system responding to them (6.2.2). These communications were categorised as separate interactions as the players were directly interacting and receiving replies. All three elements (6.1.3, 6.2.1 and 6.2.2) linked to a narrative piece (7.7.3) in Week 4. In the information revealed by the system with player interaction (6.2.2) the players received more narrative (6.3.1) which linked to an external event (unnumbered). This phenomenon was a result of a fan of the game creating narrative content that did not supplant or confuse the existing narrative, but complemented it (player as producer).

5.2.6 Week 4 (10 August 2004 – 17 August 2004)

The diagram in Figure 56 shows the representation of Week 4 of “I Love Bees”.

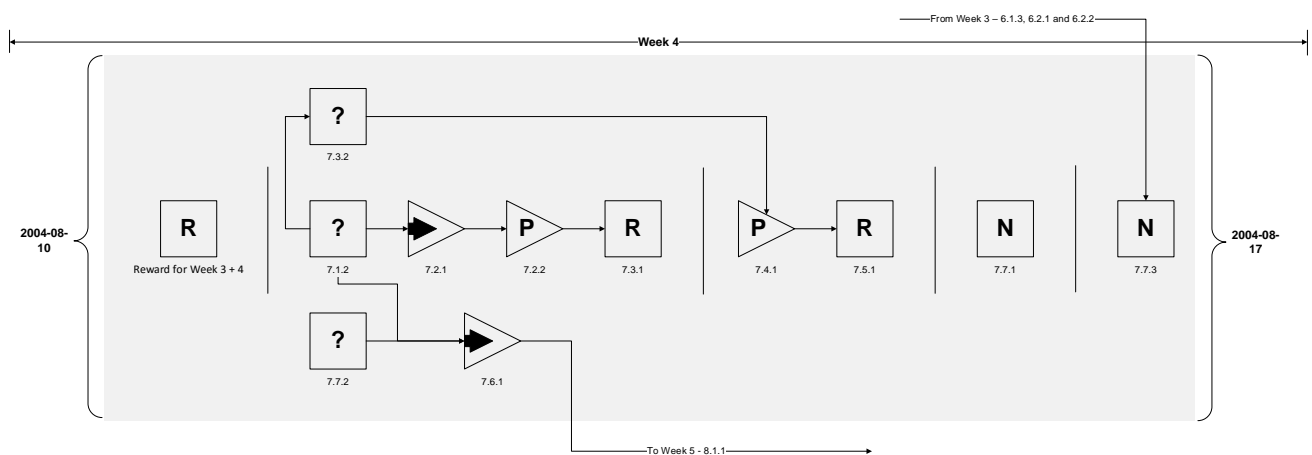


Figure 56: Week 4 (10 August 2004 – 17 August 2004).

Week 4 started off with the player receiving a narrative reward in the form of an announcement that they had completed the previous phases of the game and the new phase had begun. A narrative hook (7.1.2) in the form of various updates provided the players with the starting points for Week 4. The narrative hook (7.1.2) pointed to a lead-in mechanism (7.2.1) which led to a puzzle (7.2.2). Solving the puzzle (7.2.2) provided the players with a narrative reward (7.3.1).

The narrative hook (7.1.2) also pointed the players towards another narrative hook (7.3.2). Following the trail the players found a puzzle (7.4.1) which resulted in a narrative reward (7.5.1). The first narrative hook (7.1.2) also linked to another lead-in mechanism (7.6.1) which pointed to a phenomenon in Week 5 (a lead-in mechanism – 8.1.1). The narrative piece (7.7.1) again added to the narrative in various ways: making a game character appear like another character, showing game characters interact with one another as well as linking real world events with the game narrative.

Another narrative hook (7.7.2) pointed to an already known lead-in mechanism (7.6.1). The puppet masters produced various links to the same content from different perspectives. This action allowed the players to piece together a complex narrative and provided them with an understanding of the various characters.

5.2.7 Week 5 (17 August 2004 – 24 August 2004)

The diagram in Figure 57 shows the representation of Week 5 of “I Love Bees”.

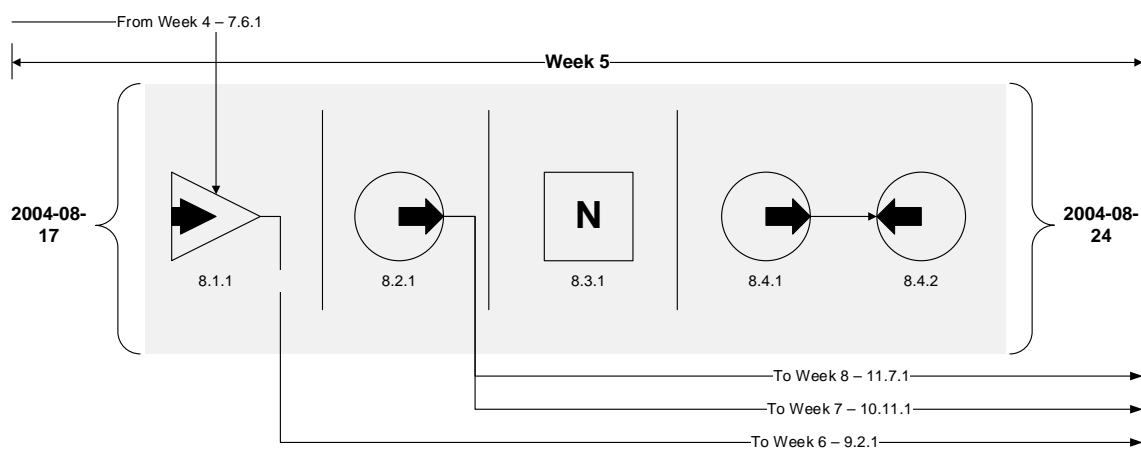


Figure 57: Week 5 (17 August 2004 – 24 August 2004).

The start of Week 5 (lead-in mechanism – 8.1.1) was an update of a lead-in mechanism (7.6.1) in Week 4. The mechanism pointed to another mechanism (9.2.1) in Week 6. The build-up of these mechanisms eventually led to a puzzle (more details in Week 6).

Due to the nature of some of the game characters and their presence in the game, they received constant communication from players. One such game character communicated back to the players (system with players – 8.2.1). Narrative was provided to the players from the “player” character (8.3.1). The “player” character interacted with the players (8.4.1) prompting a player response (8.4.2). The interaction was a prompting for the players to contribute to the game narrative.

The system with player interaction (8.2.1) linked to a narrative reward (10.11.1) in Week 7 as well as a narrative reward (11.7.1) in Week 8. The lead-in mechanism identified earlier (8.1.1) linked to another lead-in mechanism (9.2.1) in Week 6.

5.2.8 Week 6 (24 August 2004 – 31 August 2004)

The diagram in Figure 58 shows the representation of Week 6 of “I Love Bees”.

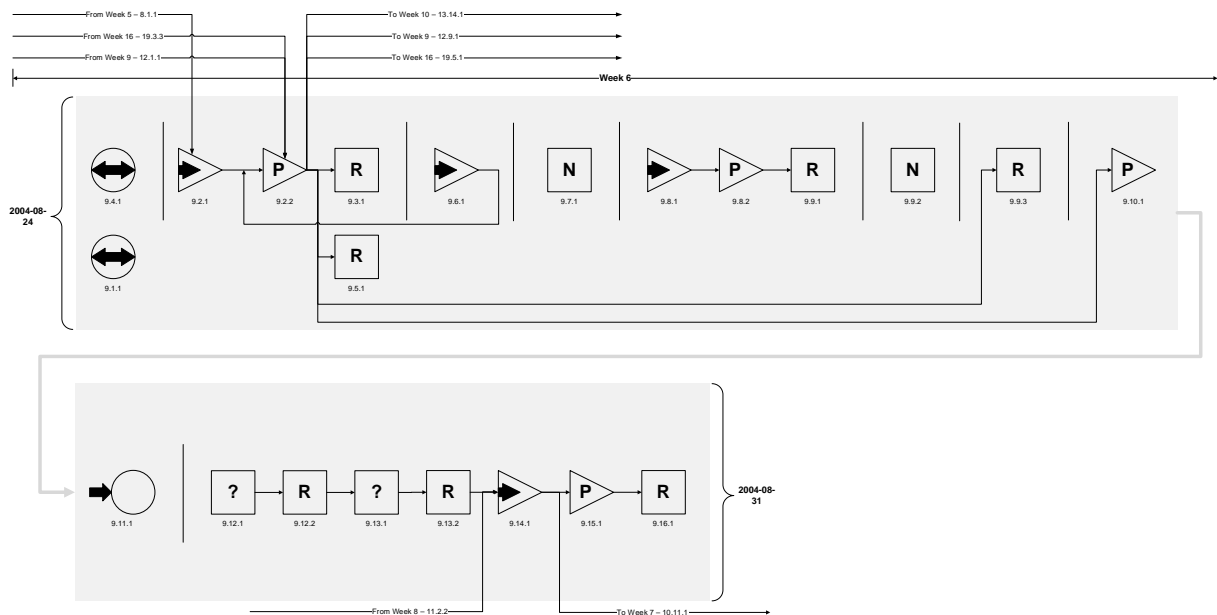


Figure 58: Week 6 (24 August 2004 – 31 August 2004).

Week 6 started off with the players meeting each other by accident during a supposed power play (player with player interaction – 9.1.1). A lead-in mechanism (8.1.1) in Week 5 updated a lead-in mechanism (9.2.1) in this week with added information. The mechanism (9.2.1) directed the players to a puzzle (9.2.2) which resulted in two pieces of narrative (9.3.1 and 9.5.1). It is important to note that another lead-in mechanism (8.1.1) linked to 9.2.1 from Week 5. The above-mentioned flow of lead-in mechanism to puzzle to reward hinged on the players effectively communicating with one another (player with player – 9.4.1). Another lead-in mechanism (9.6.1) provided the player with more information-specific tasks. A narrative piece (9.7.1) provided the players with more context and characterization for the game. The weekly update also provided the players with a lead-in mechanism (9.8.1), pointing to a puzzle (9.8.2) which resulted in narrative reward (9.9.1). Yet another narrative piece (9.9.2) added to the information and context of the game narrative.

The lead-in mechanism, 9.6.1, pointed the players to a repetition of a puzzle (9.2.2). Solving the puzzle again but with the new information provided the players with a narrative reward (9.9.3). The puzzle of 9.2.2 was again repeated with new information or occurred in a modified version (9.10.1). Each time narrative was produced as the reward for solving the puzzles. The puzzle (9.2.2) was similar throughout all the weeks of the game. Mechanic variation applied to the puzzle but the core mechanic remained the same. The puzzle (9.2.2) linked to narrative rewards (13.14.1 – Week 10, 12.9.1 – Week 9 and 19.5.1 – Week 16). The puzzle (9.2.2) was also linked by narrative hooks from Week 16 (19.3.3) and Week 9 (12.1.1). Linked in this case is not in terms of time but in relationship (as described in this chapter's introduction).

An external event during this week (9.11.1) exposed the internal workings of the game to the world beyond the player community and the fans of the game. These interactions were important to note as they could have resulted in the community growing even further.

The game also provided the players with narrative during Week 6. The narrative given was either in the form of narrative hooks or narrative pieces. The hooks pointed to narrative rewards in some of these cases as the hook did not necessarily contain a puzzle but required some logic thinking from the player community. Narrative hook 9.12.1 led to narrative reward 9.12.2 which in turn pointed to another narrative hook 9.13.1. The narrative hook in 9.13.1 contained a riddle which led to a narrative reward (9.13.2).

The narrative reward in 9.13.2 directed the players to a lead-in mechanism (9.14.1) which linked to a puzzle (9.15.1). The puzzle (9.15.1) produced a narrative reward (9.16.1).

Week 6 contained the first instance of a game action (in the form of a puzzle) that would be repeated through the game. The players gained access to the puzzles as well as the information to solve the puzzle through narrative pieces that were released during a game update, from narrative hooks discovered in the update or information contained within the narrative rewards. Week 6 also hinged heavily on the players' ability to share the information they found in updates. The community interaction in this week showed an occurrence of the players dividing into sub groups to focus on tasks that interested them. Some players focused on solving puzzles found on the websites and on sifting through information discovered in website updates. Other players participated in power plays, using the information that the sub groups discovered to progress through the challenges.

5.2.9 Week 7 (31 August 2004 – 7 September 2004)

The diagram in Figure 59 shows the representation of Week 7 of "I Love Bees".

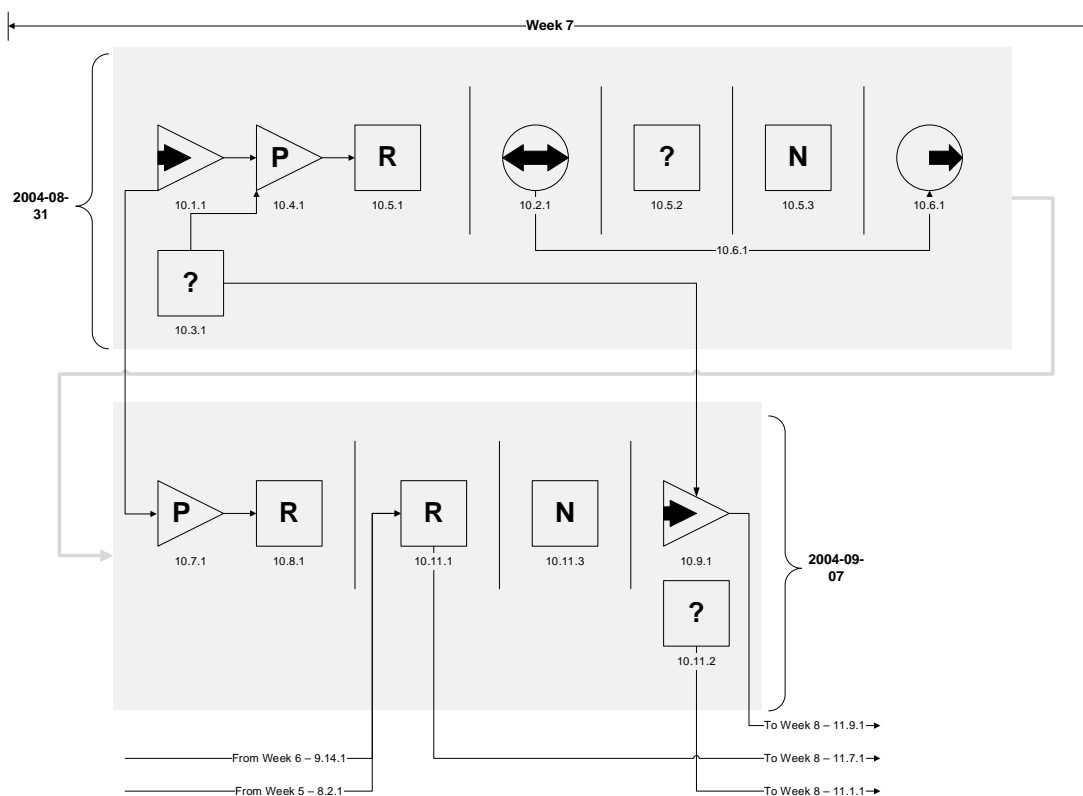


Figure 59: Week 7 (31 August 2004 – 7 September 2004).

Week 7 started with updates on the basic game action and on other narrative updates the players were used to. A basic structure of lead-in mechanism to puzzle to narrative reward started Week 7 (10.1.1 to 10.4.1 to 10.5.1). An interesting player with player discussion (10.2.1) showed that the players were bored with the basic game action and wanted more narrative or different activities. A narrative hook (10.3.1) provided the players with an update. In the update the players found image corruptions amongst other narrative information. The corruptions provided the players with a link to the puzzle (10.4.1) as well as the lead-in mechanism (10.9.1) discussed later in this section.

A narrative hook (10.5.2) provided the players with the opportunity to choose sides in the narrative that was unfolding. At that point in the game, no action occurred but the narrative placed there made the players aware of the fact that they could choose sides.

Narrative was provided to the players that set the context for activities and events later in the game in the form of a narrative piece (10.5.3).

The system provided the players with specific information (system with player interaction – 10.6.1) that changed the way the basic game action functioned. The change could possibly be a result of the player with player interaction earlier in the week (10.2.1).

The lead-in mechanism (10.1.1) from the start of the week also led to another puzzle (10.7.1) which produced more narrative (narrative reward – 10.8.1). Through the players' interaction with the game in the previous week (lead-in mechanism – 9.14.1), the players received a reward in the form of narrative (10.11.1). The reward was because of a system with player interaction in Week 5 (8.2.1). The narrative reward (10.11.1) was also preceded by a lead-in mechanism (9.14.1) in Week 6 (an implicit puzzle element was also present between the lead-in mechanism and the narrative reward). The narrative reward (10.11.1) also led to another narrative reward in Week 7 (11.7.1). The players again received more narrative in the form of narrative pieces (10.11.3).

The last two phenomena (10.9.1 and 10.11.2) in Week 7 will be discussed in detail in Week 8. They were provided to the players in Week 7 but were used in Week 8.

Week 7 provided the first occurrence of the puppet masters changing a game action (introducing mechanic variation) to engage the players more. This week also provided examples of how “I Love Bees” use narrative and lead-in mechanisms from previous weeks to help solve puzzles and construct narrative.

5.2.10 Week 8 (7 September 2004 – 14 September 2004)

The diagram in Figure 60 shows the representation of Week 8 of “I Love Bees”.

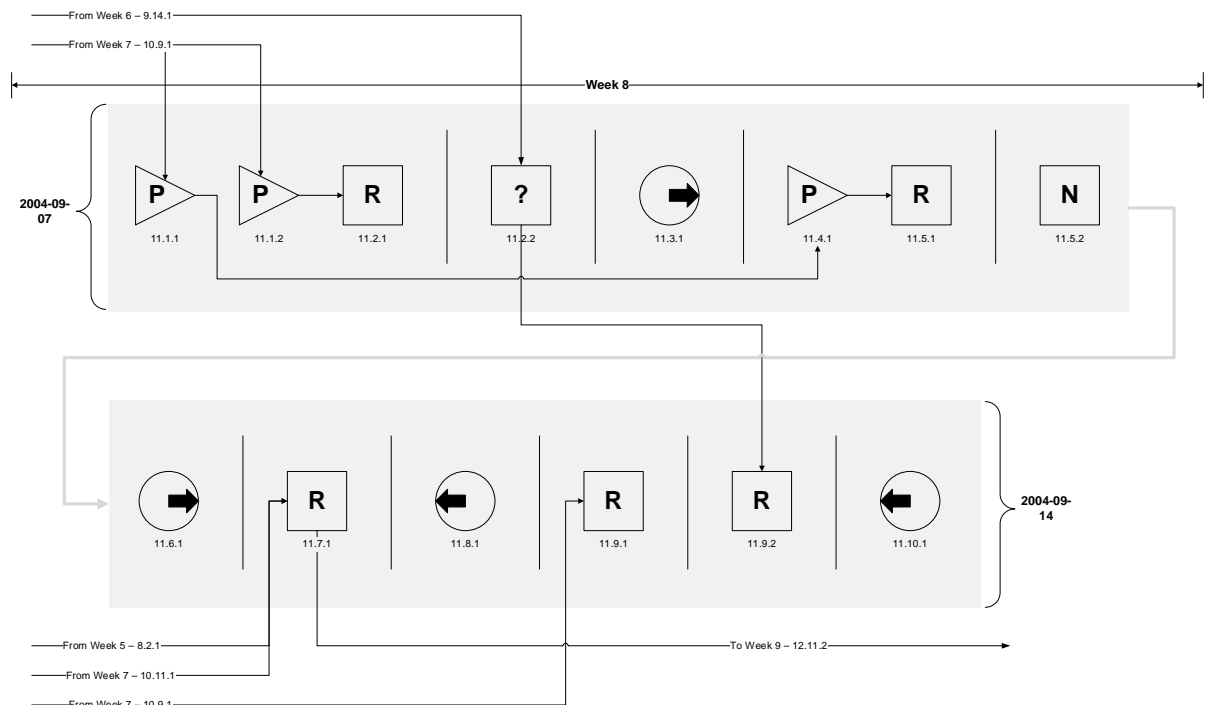


Figure 60: Week 8 (7 September 2004 – 14 September 2004).

The lead-in mechanism in Week 7 (10.9.1) was a preview for the content of the puzzle in Week 8 (11.1.1). It also pointed to another puzzle (11.1.2) which was solved and produced narrative reward

(11.2.1). A narrative hook (11.2.2) pointed the players to a previous lead-in mechanism in Week 6 (9.14.1). The old lead-in mechanism (9.14.1) was updated by the puppet masters.

The system with player interaction phenomenon (11.3.1) was an example of a game character changing game information because of a puppet master error. This phenomenon does not occur often and in most cases even spotted by the players.

The narrative hook in Week 7 (10.11.2) added information for the puzzle the players solved earlier in the week (11.1.1). The puzzle also linked the players to a new puzzle (11.4.1). Solving both puzzles received a narrative reward (11.5.1). The players also received narrative content in the form of a narrative piece (11.5.2). The narrative content given to the players attempted to make game characters more relatable. The system also prompted the players (system with player interaction – 11.6.1) to expand the player base internationally.

A narrative reward (11.7.1) was given to the players which had resulted from a system with player interaction (8.2.1) in Week 5. The narrative reward (11.7.1) was also a continuation of a narrative reward in Week 6 (10.11.1). The narrative reward (11.7.1) also continues in Week 9 in another narrative reward (12.11.2).

The opportunity for player with system interaction (11.8.1) was another avenue where the players could receive game related information and content by interacting with game characters. A narrative reward (11.9.1) was also given due to an update to a lead-in mechanism (10.9.1) in Week 6. Another narrative hook (11.2.2) update provided the players with a narrative reward (11.9.2).

An example of the player created narrative becoming part of the game narrative was found in the player with system interaction (11.10.1). The game narrative referred to the content created by the players for the game.

5.2.11 Week 9 (14 September 2004 – 21 September 2004)

The diagram in Figure 61 shows the representation of Week 9 of “I Love Bees”.

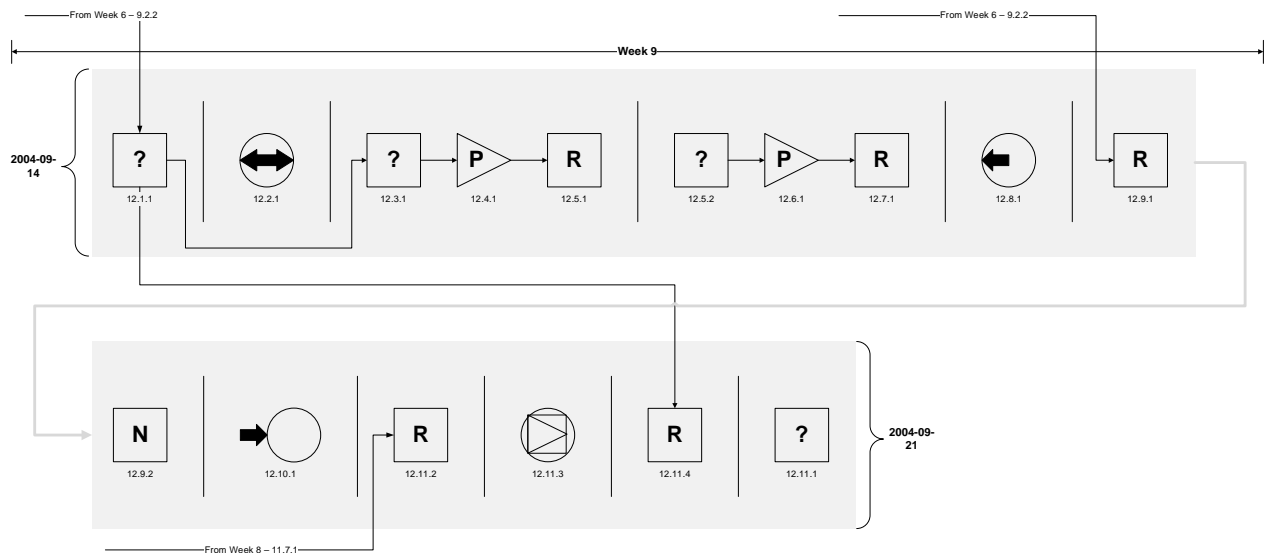


Figure 61: Week 9 (14 September 2004 – 21 September 2004).

Week 9 started off with an update in the shape of a narrative hook (12.1.1). The puppet masters also added another variation to the basic game mechanic through this narrative hook. The week also

started off with the players stating (player with player interaction – 12.2.1) that the basic game mechanic was becoming monotonous (even with the variations included).

The players also discovered another narrative hook (12.3.1) within the first narrative hook (12.1.1). The narrative hook led them to a puzzle (12.4.1) that gave them a narrative reward (12.5.1). Another narrative hook (12.5.2) led the players to a puzzle (12.6.1) that gave them a narrative reward (12.7.1).

The players' interaction with the system at this point (12.8.1) marked the communities' threshold for doing the same game action over and over. This was a turning point in the game which resulted in a drastic mechanic variation.

The narrative hook (12.1.1) which started off Week 9 provided the players with new content for the repeated puzzle phenomenon first found in Week 6 (9.2.2). Plugging the new information into the same mechanic produced a narrative reward (12.9.1).

A narrative piece (12.9.2) provided by the puppet masters served in linking the game narrative with the fiction of the character's life. The narrative pieces provided in this way every week served in building the narrative context of the game as well as linking the fiction within the game fiction (fictitious character talking about her life as real, but then dealing with other fictitious events and characters as if the character is participating with the players).

At that point the guide writer mentioned that it was difficult to explain to other people what these events, activities and people mean. Explaining something that permeated the players' reality to such a degree that, even though not real, the player acted as if it was real was extremely difficult for the guide writer. This phenomenon was categorized as an external event (12.10.1) as it dealt with the players' need to consolidate the real world with the game world.

A narrative reward (12.11.2) received in this week was the continuation of a narrative reward received in Week 8 (11.7.1) that in turn was the continuation of a narrative reward received in Week 7 (10.11.1). A complete component (12.11.3) was the repetition of the basic game mechanic but located in a different country (narrative hook leading to the same puzzle producing a narrative reward).

The narrative hook at the beginning of the week (12.1.1) also provided the players with a narrative reward (12.11.4). The players also found more updates in the form of a narrative hook (12.11.1) which added to the information that could be plugged into the basic game action to retrieve more narrative.

5.2.12 Week 10 (21 September 2004 – 28 September 2004)

The diagram in Figure 62 shows the representation of Week 10 of "I Love Bees".

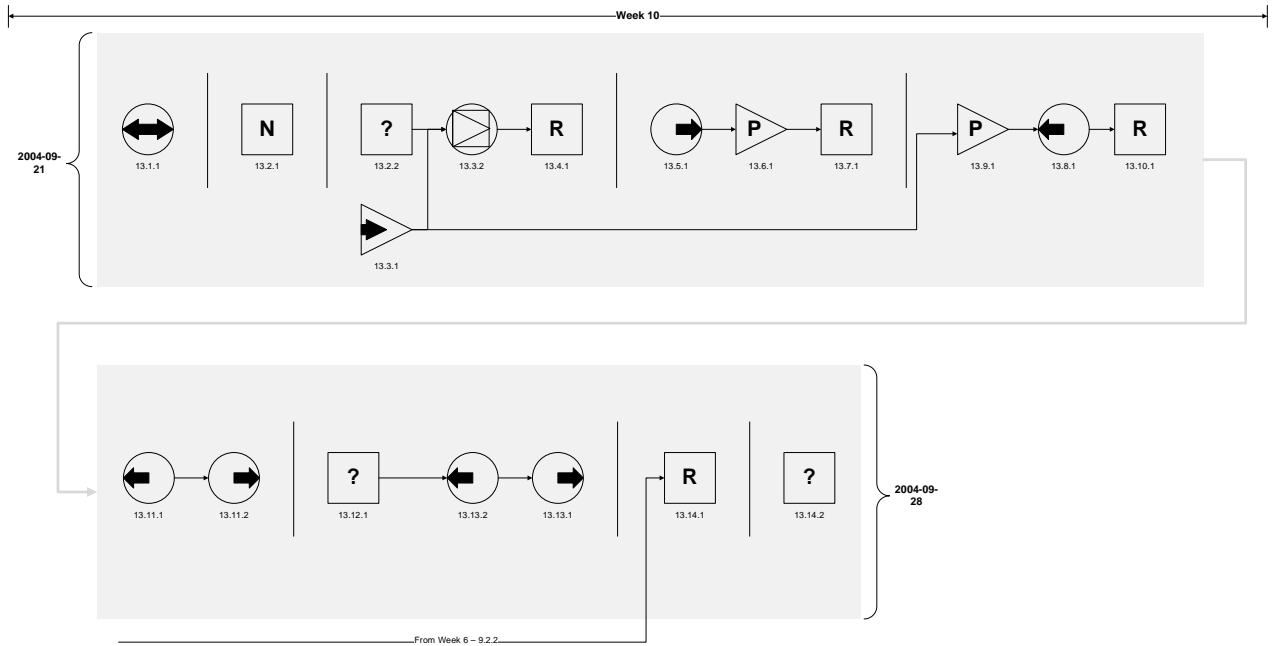


Figure 62: Week 10 (21 September 2004 – 28 September 2004).

At the start of Week 10 the players, to motivate themselves, pushed for the artificial limit set, by the game, on the number of puzzle to complete (13.1.1). The players were also given a narrative piece (13.2.1) because they did not solve the puzzle required to receive it as narrative reward.

The update for the week (narrative hook – 13.2.2) led to a complete component (13.3.2). The complete component contained the puzzles as in the previous week, the information linking to the puzzles as well as the narrative rewards (wav files). The players pieced the narrative together and received the narrative reward (13.4.1).

The players' push for completing the puzzles (13.1.1) was observed by the puppet masters and they received interaction from the system related to their achievement (13.5.1). The system interaction also included active players as part of the game by mentioning them. The system interaction (13.5.1) also led to a puzzle (13.6.1) that produced a narrative reward (13.7.1). The narrative reward did not only provide the players with narrative but explicitly required the players involved to share the information with the community and the game characters.

A lead-in mechanism (13.3.1) discovered earlier in the week led the players to a puzzle (13.9.1). Because of the player with system interaction (13.8.1) the puzzles were solved in quick succession and provided the players with a narrative reward (13.10.1). The player with system interaction (13.11.1) showed that by introducing a mechanic variation to the existing mechanic, it would reenergize the players and drive them to continue to participate in the game. The system with player interaction (13.11.2) disheartened the players as they thought that the current type of puzzles were at an end. The interaction introduced a different way of interacting with the game which interested the players.

A narrative hook (13.12.1) in the form of a repeated update every week introduced a new element into the game for the players. The players assumed that they would have to participate in solving the narrative introduced by this phenomenon. Because of the players' interaction with the system (13.13.2) the players received a system with player interaction (13.13.1) clarifying the content of the narrative hook (13.12.1).

The players received a narrative reward (13.14.1) for completing game actions in the previous weeks of the game. The puzzle for the narrative reward (13.14.1) was a repetition of the puzzle in Week 6 (9.2.2). The players also received a narrative hook (13.14.2) which appeared to be a basic narrative reveal but the content of the narrative hook (13.14.2) was used later in the game during events.

Week 10 provided a surge in player action because the players thought they were finished with the basic gameplay and that the game would move on to different game actions. The puppet masters did change the basic mechanic of the game during Week 10 as well as provide the players with more community based interaction. The game, moving on from Week 10, required more direct interaction between the players because of the change in the game.

5.2.13 Week 11 (28 September 2004 – 5 October 2004)

The diagram in Figure 63 shows the representation of Week 11 of “I Love Bees”.

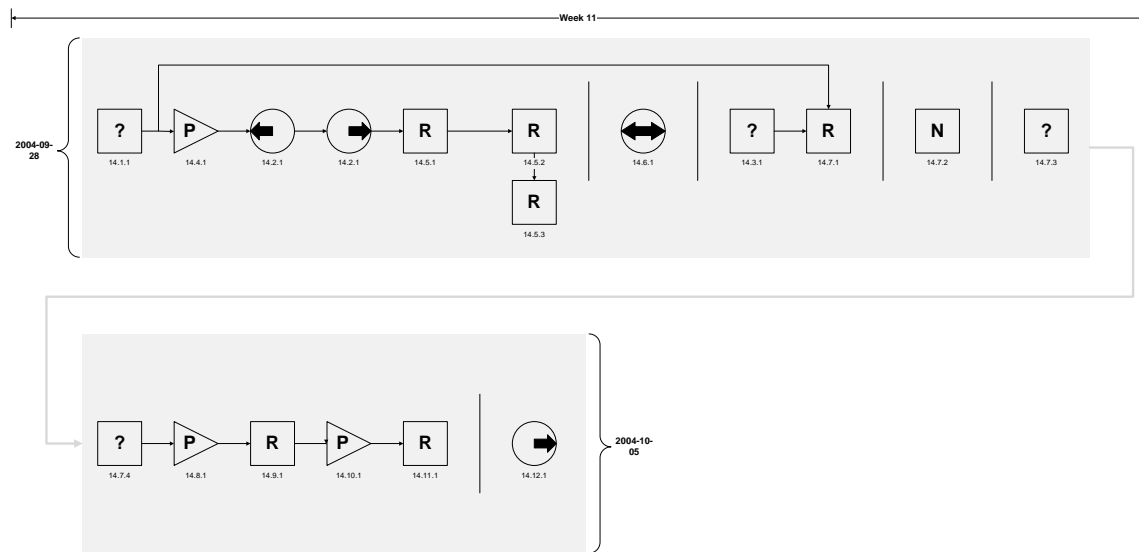


Figure 63: Week 11 (28 September 2004 – 5 October 2004).

Week 11 introduced more interactive game actions, similar to text adventure games. The game mechanic remained the same but now required more interaction from the players to achieve the goals. The weekly update in the form of a narrative hook (14.1.1) introduced the interactive element in the basic game mechanic. This led to the puzzle (14.4.1). Solving the puzzle (14.4.1) relied heavily on the player and system communicating back and forth (player with system and system with player – 14.2.1) and produced three separate narrative rewards (14.5.1, 14.5.2 and 14.5.3).

The introduction of player specific roles within the game in Week 10 as well as more player with player interaction (14.6.1) resulted in the player base growing.

The narrative hook at the beginning of the week (14.1.1) as well as another narrative hook (14.3.1) provided the players with a narrative reward (14.7.1). The players also received a narrative piece as part of their weekly update (14.7.2). The players received another narrative hook (14.7.3) providing narrative context but also directed the players to content that became relevant in Week 12.

A narrative hook (14.7.4) linked the players to a puzzle (14.8.1) that resulted in a narrative reward (14.9.1). That narrative reward directed the players to another puzzle (14.10.1) that resulted in even more narrative reward (14.11.1). The system also interacted with the players (14.12.1) by including the active players of the game in the game narrative.

5.2.14 Week 12 (5 October 2004 – 12 October 2004)

The diagram in Figure 64 shows the representation of Week 12 of “I Love Bees”.

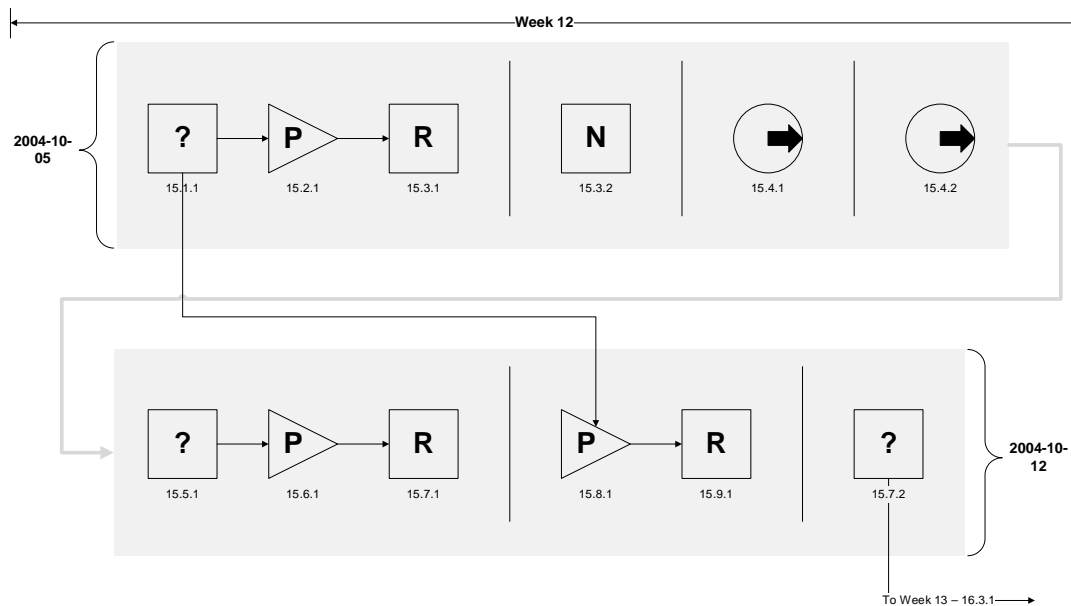


Figure 64: Week 12 (5 October 2004 – 12 October 2004).

The weekly update in the form of a narrative hook (15.1.1) directed the players to two puzzles. The first puzzle (15.2.1) produced a narrative reward (15.3.1) and introduced a mechanic variation for the basic game action. The second puzzle (15.8.1) rewarded the players with a narrative reward (15.9.1).

The players received a narrative piece (15.3.2) as in the previous week that again expanded on the game narrative. The system provided the players (system with player interaction – 15.4.1) with more game related information for game actions. The interaction also resulted in a mechanic variation for the game mechanics. The system with player interaction mentioned in 15.4.2 again rewarded the players with their names being included in the game narrative. Even though system with player interaction is not the same as a narrative reward, in the case of system interactions with the players (mentioning players by name) can be considered “rewards of glory” where the mere fact that players are being mentioned by the system is considered a reward in itself.

Another narrative hook (15.5.1) linked the players to a puzzle (15.6.1) which provided them with a narrative reward (15.7.1). A narrative hook (15.7.2) led the players to a puzzle in Week 13 (16.3.1). More detail will be provided in the discussion of Week 13.

At this point in the game, the phenomenon settled into a rhythm which was easily identified. The game play did not become stale as the puppet masters continuously added variation to the game mechanic. The players were also provided with large pieces of narrative that provided the story within the story.

5.2.15 Week 13 (12 October 2004 – 16 October 2004)

The diagram in Figure 65 shows the representation of Week 13 of “I Love Bees”.

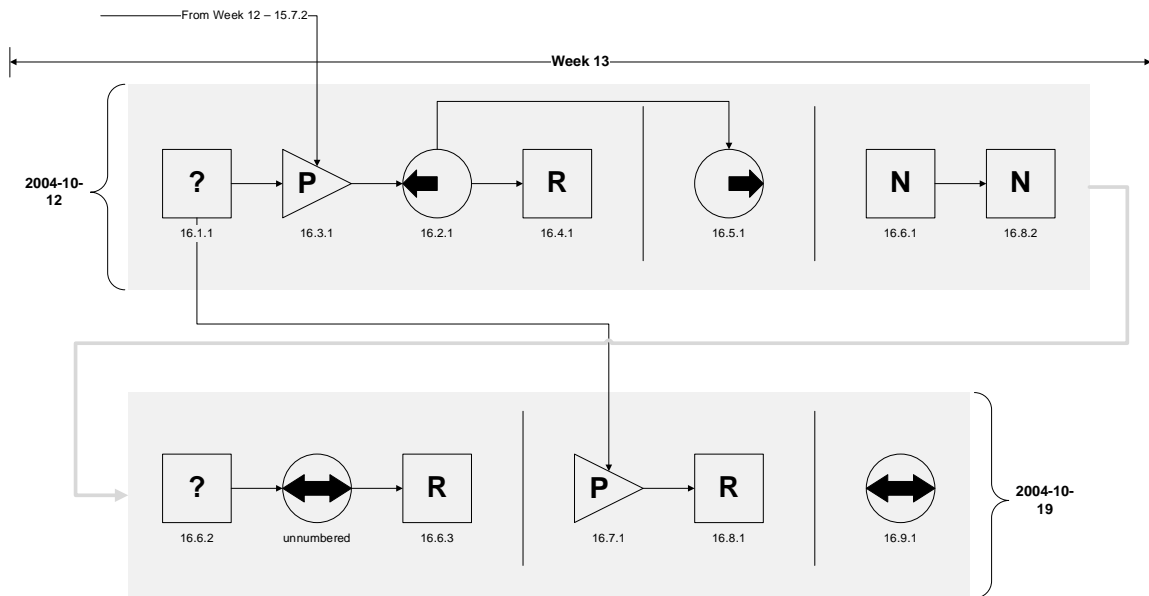


Figure 65: Week 13 (12 October 2004 – 16 October 2004).

Week 13 started off with a game update in the form of a narrative hook (16.1.1) that led to two puzzles as in Week 12. The first puzzle (16.3.1) was solved with a player with system interaction (16.2.1) assisting in player participation. The players received a narrative reward (16.4.1). A narrative hook in Week 12 (15.7.2) also linked to the puzzle (16.3.1). The second puzzle (16.7.1) gave the players a narrative reward (16.8.1). Because of the player participation (player with system interaction – 16.2.1) the system interacted with the players (16.5.1) to include them in the game system as in previous weeks.

Two narrative pieces released during this week linked two game characters to one another (16.6.1 and 16.8.2). A narrative hook released in this week (16.6.2) linked directly to a narrative reward (16.6.3). This was not by design, the players bypassed the puzzle by simply guessing the solution to the puzzle.

The player with player interaction (16.9.1) was an example of the experienced ARG players, which was an intricate component in community creation for “I Love Bees”, sharing their previous game experience with the existing ARG players.

5.2.16 Week 14 (19 October 2004 – 26 October 2004)

The diagram in Figure 66 shows the representation of Week 14 of “I Love Bees”.

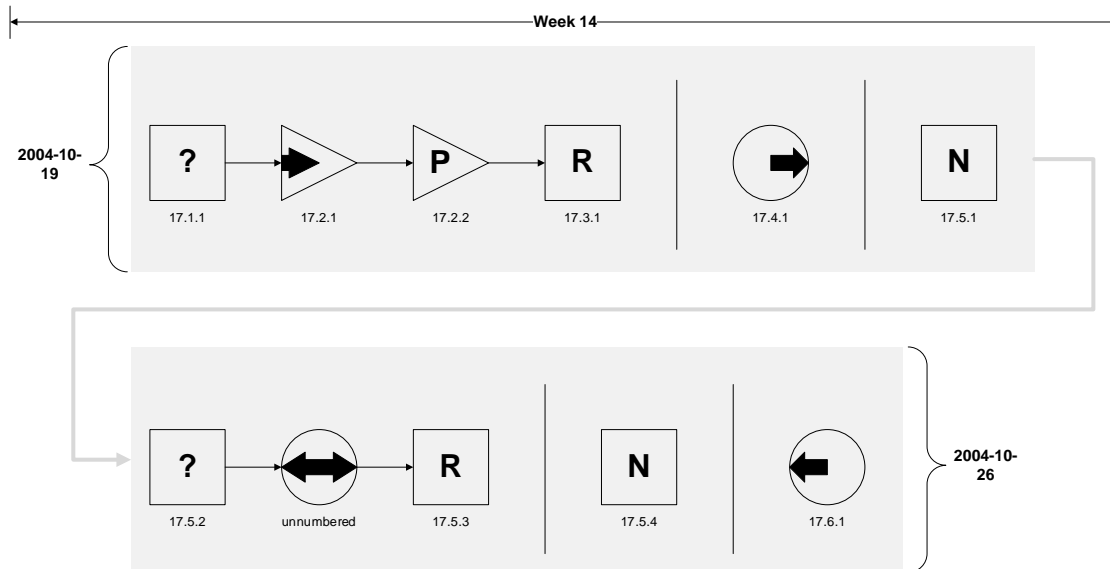


Figure 66: Week 14 (19 October 2004 – 26 October 2004).

The players received a narrative hook (17.1.1) at the beginning of Week 14. The narrative hook pointed the players to a lead-in mechanism (17.2.1). The phenomenon was classified as a lead-in mechanism due to the fact that the players had to interact with it and it then in turn pointed them to a puzzle. The puzzle (17.2.2) when solved gave the players a narrative reward (17.3.1).

The system again interacted with the players (17.4.1) by adding their names to the game narrative. The players also received a narrative update in the form of a narrative piece (17.5.1). The players also received a narrative hook (17.5.2) which resulted in a narrative reward (17.5.3). As in Week 13, the players skipped the puzzle component by guessing the solution to the puzzle.

A narrative piece (17.5.4) gave the players details on characters' interaction with one another. The players also interacted with the system (17.6.1) by attempting to dissuade game characters from certain actions. This interaction was more in-depth than just providing information to the game system.

5.2.17 Week 15 (26 October 2004 – 31 October 2004)

The diagram in Figure 67 shows the representation of Week 15 of "I Love Bees".

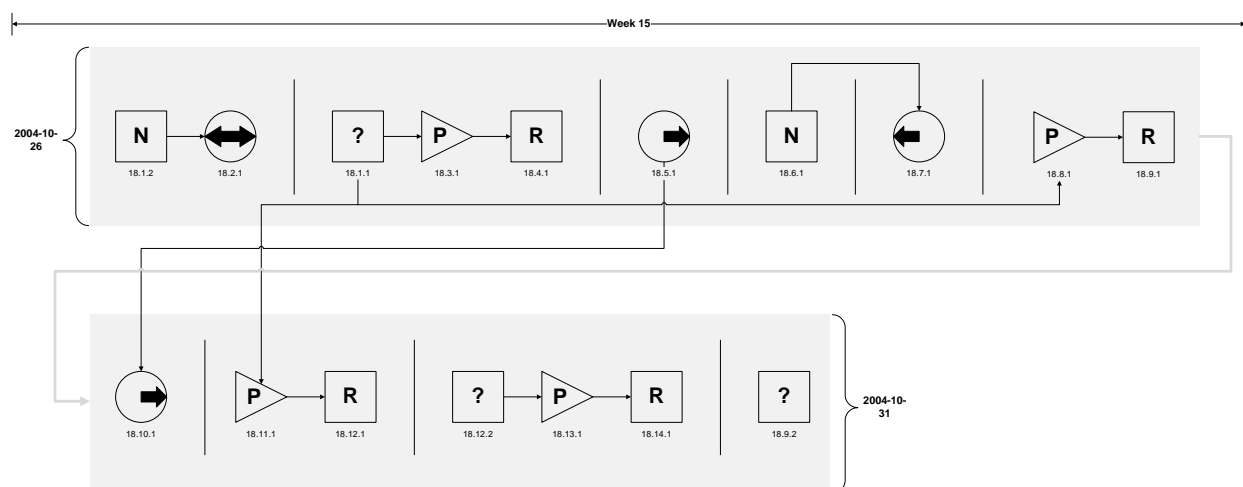


Figure 67: Week 15 (26 October 2004 – 31 October 2004).

Early in Week 15 the players found a narrative piece (18.1.2) which led to the players talking amongst themselves (player with player interaction – 18.2.1), theorizing that the game would be ending soon. The weekly update was also provided as a narrative hook (18.1.1). The narrative hook pointed to three puzzles in Week 15.

The first puzzle (18.3.1) resulted in a narrative reward (18.4.1). The guide writer commented that the reward was not much of a reward. The second puzzle (18.8.1) led to a narrative reward (18.9.1). The third puzzle (18.11.1) produced more narrative in the form of a narrative reward (18.12.1). The narrative hook (18.9.2) provided the players with similar narrative updates as in previous weeks, that were supposed to link to more puzzles. There were no accompanying updates as the character responsible was now dead. For more detail, refer to Chapter 4 – 4.1.18.9.2.

The players also received a narrative update (18.6.1) providing more game narrative. The narrative update resulted in the players interacting with the system (18.7.1). The system interacting with the players (18.5.1) provided the players with opportunity to participate in real life events. These events were rewards for the players who participated with the game up until that point. The system interaction, 18.10.1, was similar to the previously mentioned event.

Finally a narrative hook (18.12.2) directed the players to a puzzle (18.13.1) which resulted in a narrative reward (18.14.1).

Week 15 followed the similar pattern as the previous weeks where the players received a narrative hook, providing them with the information to solve the various puzzles and receive game content. The players also received narrative to update them on certain game characters. This week also contained the extra interactions that provided the players with information that gave them access to a reward event.

5.2.18 Week 16 (31 October 2004 – 6 November 2004)

The diagram in Figure 66 shows the representation of Week 16 of “I Love Bees”.

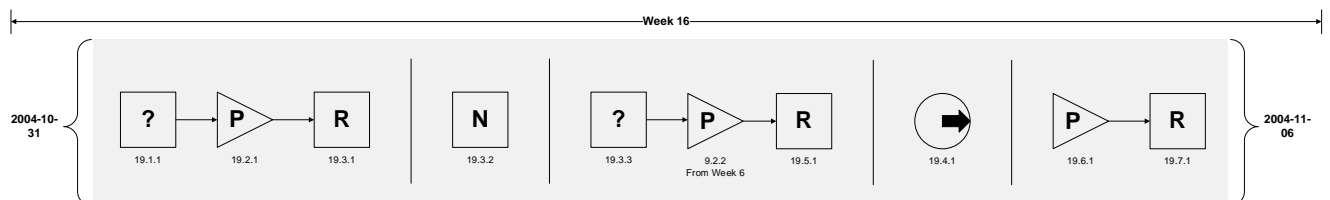


Figure 68: Week 16 (31 October 2004 – 6 November 2004).

The final week started with a narrative hook (19.1.1) in the form of updates. The narrative hook pointed to a puzzle (19.2.1) that gave the players a narrative reward (19.3.1). A narrative update (19.3.2) provided the players with an update about a game character. Another narrative hook (19.3.3) provided the players with the information required to solve more puzzles that were similar throughout the game (such as in 9.2.2) which led them to narrative reward (19.5.1). The puzzle in Week 6 (9.2.2) was repeated throughout the game but with content variations (different answers, same type of puzzle) as well as with mechanic variations that had been implemented. The system also interacted with the players (19.4.1) as in Week 15, which was an extension of the reward real life event.

The events pointed the players to a puzzle (19.6.1) that gave them a narrative reward (19.7.1).

Week 16 was the end of the game and concluded the narratives of all the characters, including the “player” character.

5.2.19 Conclusion

“I Love Bees” was a complex game in terms of narrative. The narrative consisted of a narrative within a narrative. The first layer of the story was told as if the players were experiencing it with the game character. This was similar in other games. The game then also contained an internal narrative of characters that were the primary actors of the game. A second internal narrative contained a story about yet another set of characters. These characters were directly linked to the Halo universe that the game was designed to advertise.

The game action was similar throughout the game but introduced mechanic variations as the game progressed. This researcher theorises that the variations were prompted by the player input rather than being designed as a feature from the start. The variations could also have been designed from the start but implementation was prompted by the puppet masters reading the players’ feedback.

The game hinged heavily on the players sharing information with one another. The game actions required real time sharing of information with the player community as well as sharing the narrative content so the players could construct the coherent narrative.

The narrative was used as the primary vehicle to progress the game. The weekly updates provided the players with most of the starting information for each week to progress. From this narrative information the players discovered more narrative, were able to solve puzzles (by plugging the new information into the existing game action) and uncover the complete game narrative.

The diagram in Figure 69 shows the summary diagram of the game.

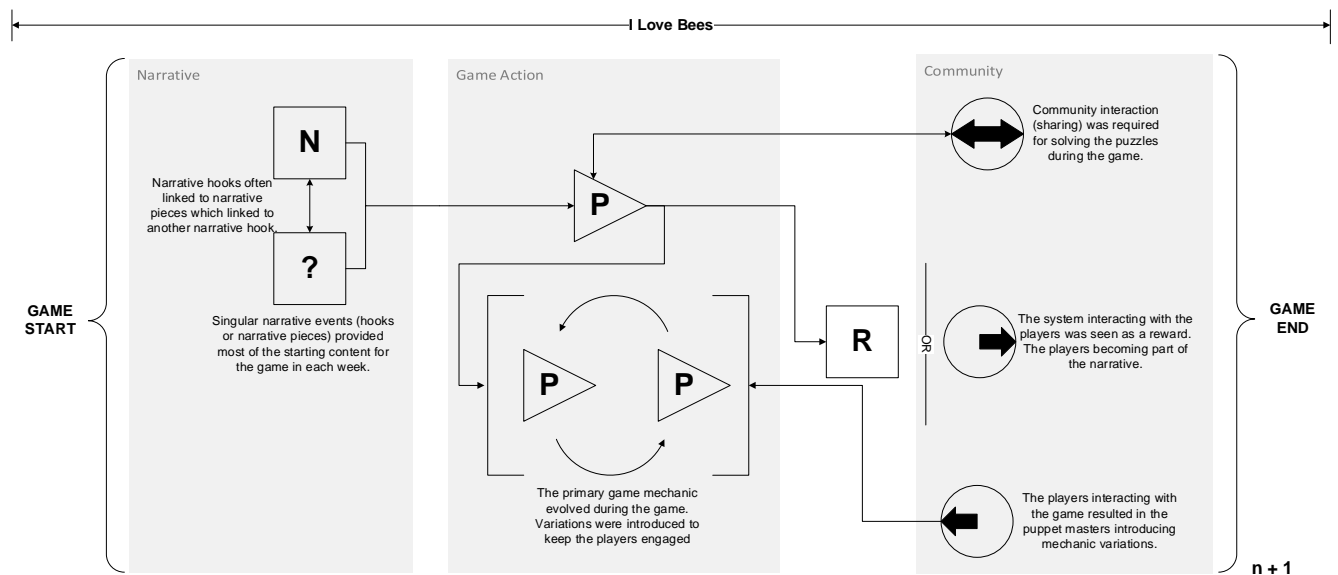


Figure 69: Summary diagram for "I Love Bees".

5.3 Production ARG – “Year Zero”

5.3.1 Introduction

“Year Zero” ran a total of eleven weeks. The game focused, as with “Number 13” on power plays. Due to the focus of the game being on the music of NIN, the power plays primarily allowed the players to attend special events disguised as game events. The puppet masters also released game content in large collections which the players had to sift through and construct the narrative. The players also constructed their own narrative in the form of player theories and interaction with the game. The

puzzles required expertise including steganography, audio analysis, video scrubbing and cryptography. The community requirement was not as strenuous as with “I Love Bees” where most of the game required the player community to continuously share information with one another. “Year Zero” focused on the different pieces of story provided to the players which they then assembled and placed into the larger narrative of the game. The community interaction was primarily for narrative assembly and creation.

The numbering in the diagrams refers back to chapter 4. The following sections’ numbering in the diagrams requires the prefix 4.2 (see Chapter 4 – 4.2).

5.3.2 Rabbit hole and Week 1 (12 February 2007 – 18 February 2007)

The diagram in Figure 70 shows the representation of the rabbit hole and Week 1 of “Year Zero”.

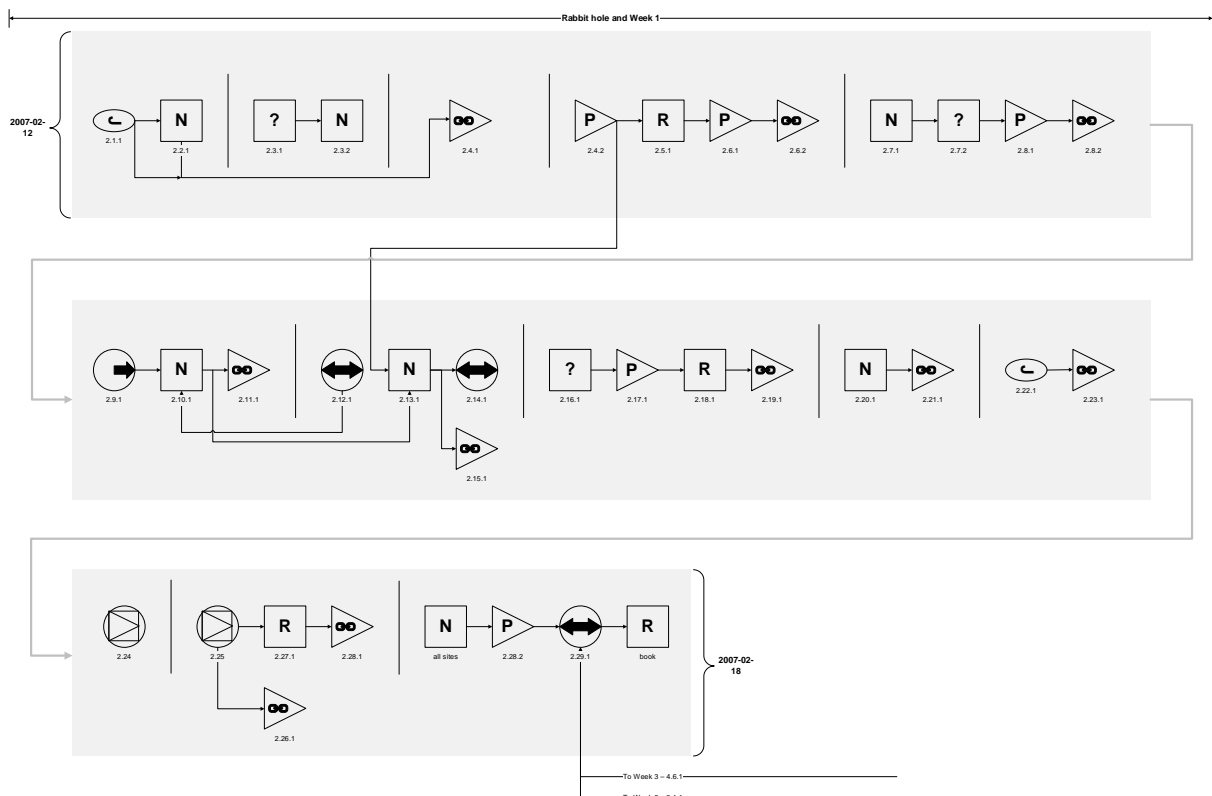


Figure 70: Rabbit hole and Week 1 (12 February 2007 – 18 February 2007).

The first phenomenon in the game summary (Chapter 4 – 4.2) was categorised as a hook (2.1.1) under the rabbit hole category because that was one of the first instances that made the players aware of the game. Following the hook, the players discovered one of the first game sites (narrative piece – 2.2.1). The phenomenon was categorised as a narrative piece (2.2.1) as it started out providing context to the narrative of the game. The narrative piece (2.2.1) also provided the players with a recognizable entity that would become a theme throughout the game. Digging through the content of the narrative piece (2.2.1) the players also found a narrative hook (2.3.1) which directed them to another narrative piece (2.3.2) which also provided more narrative context.

Both the hook (2.1.1) and the narrative piece (2.2.1) provided the players with a phenomenon that was unique to “Year Zero”; link components (2.4.1). In the other two games certain phenomena can make reference to previous phenomena, enabling the players to create a complete series of the game events. In most cases these “links” are implicit. In the case of “Year Zero” these “link elements” are explicit. Numbers are provided for certain phenomena (by the game) and at the end of the game the

players discovered archived information of each discovered number. The archived information was in the form of narrative that referred to the events marked with the numbers. Detailed explanation of these elements can be found in Chapter 3.

Another phenomenon reported in the game guide was categorised as a puzzle (2.4.2) even though it was not created as such by the puppet masters. The completion of the “puzzle” (2.4.2) took the form of the players searching for more game related content without allowing the game to reveal opportunities to discover more content. They players went out of their way to solve a problem which did not require a solution but resulted in them gaining more information about the game. See the last paragraph in this section for more explanation of “solving puzzles that were not yet puzzles”.

The puzzle (2.4.2) led the players to various game related sites which in turn provided them with a narrative reward (2.5.1). The narrative reward (2.5.1) also contained a puzzle (2.6.1). Interacting with this puzzle produced another version of the narrative reward (2.5.1). The players also found another link element (2.6.2) in the puzzle (2.6.1).

A narrative piece (2.7.1) found within the narrative reward (2.5.1) contained a narrative hook (2.7.2) which led to a puzzle (2.8.1). When solved the players gained access to a link element (2.8.2).

The system pointed the players (system with player interaction – 2.9.1) towards a narrative piece (2.10.1). Within the narrative piece (2.10.1), players found a link element (2.11.1). The narrative piece (2.10.1) also prompted a player with player interaction (2.12.1) which led them to a narrative piece (2.13.1). This narrative piece was also accessible because of the puzzle (2.4.2). The narrative piece (2.13.1) could have been found because of narrative piece (2.10.1) but due to the players’ ability to find game related content without waiting for the game to release them, it was accessed. This discussion of whether the players should stick to the game release or follow all the clues was categorised as a player with player interaction (2.12.1).

The content of 2.13.1 resulted in the players having a discussion about game context (player with player – 2.14.1). This phenomenon was reported and categorised because it shows player engagement in the narrative without the need for external prompting. The players were already invested in the game narrative at this point. The community was also firmly in place. The narrative piece (2.13.1) also provided the players with another link element (2.15.1).

A narrative hook (2.16.1) was found within a narrative piece (2.13.1) and led to a puzzle (2.17.1). Solving the puzzle (2.17.1) produced a narrative reward (2.18.1) which also contained a link element (2.19.1). Another narrative piece (2.20.1) discovered because of the puzzle (2.4.2) earlier in the game provided the players with narrative context as well as another link element (2.21.1).

The game provided the fans of NIN with another opportunity to engage with the game and become players through the hook (2.22.1) discovered at a concert. The hook (2.22.1) pointed the players to a narrative piece in the game which was rewarded earlier as a narrative reward (2.5.1). Within the hook the players also found another link element (2.23.1).

The complete component, 2.24, consisted of a narrative hook (in the form of the hook – 2.22.1) leading to a puzzle which resulted in a narrative reward. The narrative reward linked with what the players knew about the game at this point (narrative piece – 2.2.1).

The complete component, 2.25, consisted of a narrative hook (discovered by the players at a NIN event) which led to a puzzle. Solving the puzzle produced a narrative reward. The narrative reward of the complete component (2.25) contained a puzzle which when solved produced a narrative reward (2.27.1) which contained a link element (2.28.1). The complete component also contained a link element (2.26.1).

By examining all the narrative pieces (marked as “all sites” in the diagram) the players had discovered up until the end of Week 1, the players discovered a puzzle (2.28.2). The players theorised (player with player interaction – 2.29.1) that the solution to the puzzle (2.28.2) was the titles of books (marked in the diagram as narrative reward – book).

The first week of “Year Zero” was complex in terms of game puzzles, various pieces of narrative discovered and how all these elements fit together. Most of the narrative pieces were discovered because the players used non-game related mechanism to get to the game rewards. Instead of waiting for the puzzles to be found and then solving the puzzles, the players investigated the game sites by non-game means. This led the players to find the rewards before the puzzles were in place thus “solving puzzles that were not yet puzzles”. Discovery of said puzzles at later stages during the week produced narrative pieces that the players had already found because of their desire to solve the game. The first week primarily consisted of the players establishing game context, structuring that context and gaining an understanding for the type of challenges they may be facing during the game. It was also an opportunity for the existing NIN community to establish itself as a player community.

5.3.3 Week 2 (19 February 2007 – 25 February 2007)

The diagram in Figure 71 shows the representation of Week 2 of “Year Zero”.

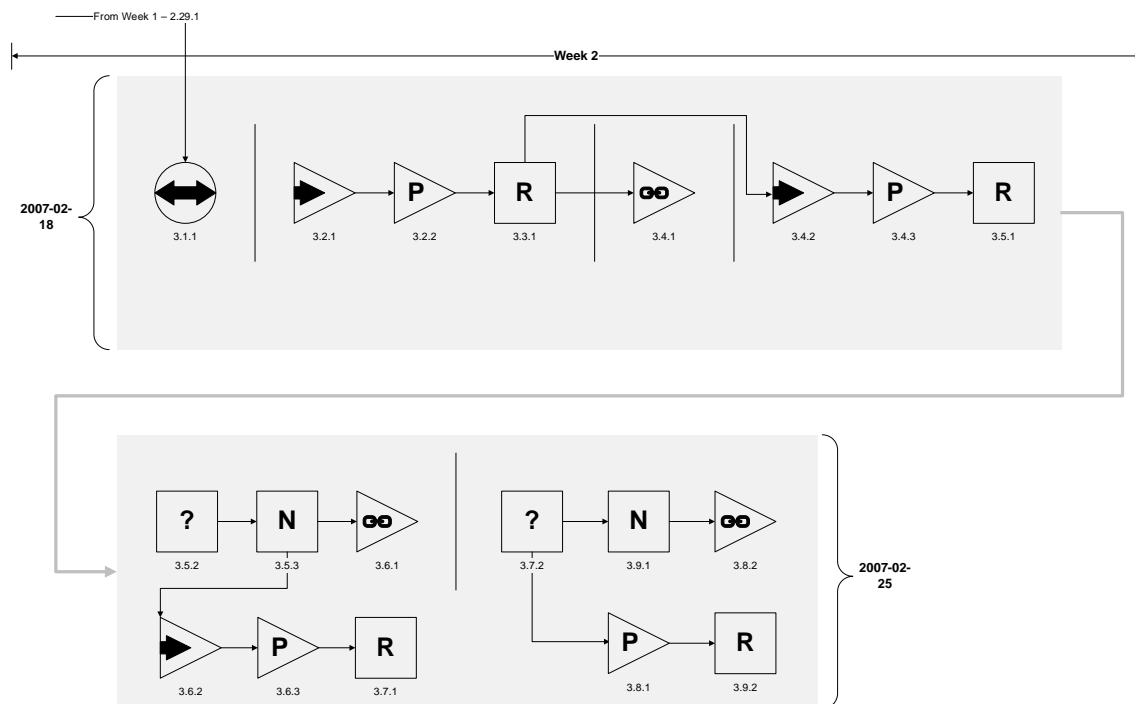


Figure 71: Week 2 (19 February 2007 – 25 February 2007).

Based on the discussion of the players (2.29.1) in Week 1, the players theorized that the next game event would take place in Spain (3.1.1). This theory was accurate and the players discovered new clues at a concert.

The clue was categorized as a lead-in mechanism (3.2.1) because it led the players to a puzzle (3.2.2). Solving the puzzle (3.2.2) the players received a narrative reward (3.3.1). The narrative reward (3.3.1) contained a link element (3.4.1) but also led the players to another lead-in mechanism (3.4.2). The lead-in mechanism (3.4.2) led the players to a puzzle (3.4.3) which, when solved, provided the players with a narrative reward (3.5.1).

During another concert, the players received a narrative hook (3.5.2) which on further investigation produced a narrative piece (3.5.3). The narrative piece contained another link element (3.6.1). The narrative hook (3.5.2) also linked to a puzzle (3.6.3) via a lead-in mechanism (3.6.2). Solving the puzzle the players found a narrative reward (3.7.1).

A third concert produced another narrative hook (3.7.2) pointing towards a narrative piece (3.9.1) containing another link element (3.8.2). The narrative hook (3.7.2) also linked to a puzzle (3.8.1) which gave the players a narrative reward (3.9.2).

It is important to state that even though the structure for Week 2 was simpler than Week 1, the underlying interaction and collaboration by the players was extremely important. The three concerts were in geographically different locations and required complete strangers to share what they found at these concerts with the existing community.

5.3.4 Week 3 (26 February 2007 – 4 March 2007)

The diagram in Figure 72 shows the representation of Week 3 of “Year Zero”.

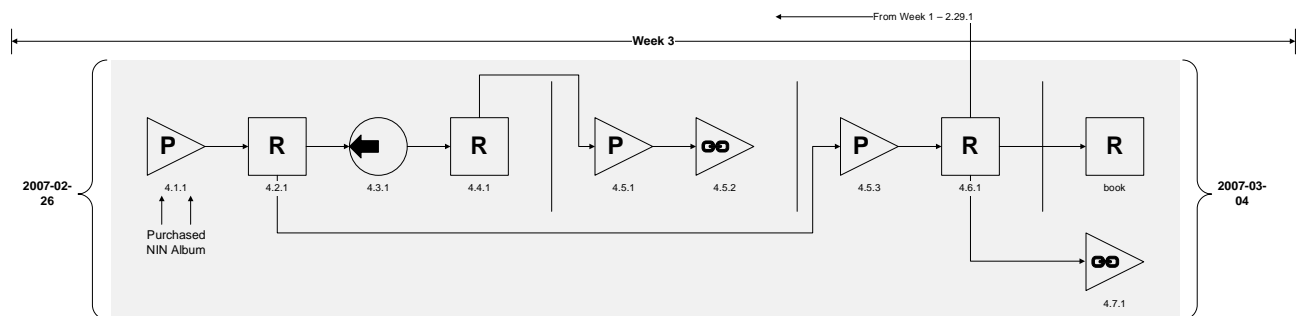


Figure 72: Week 3 (26 February 2007 – 4 March 2007).

Week 3 started with players who purchased a NIN album finding a puzzle (4.1.1) inside the album cover. The content within the album booklet served as the narrative hook. Solving the puzzle the players received a narrative reward (4.2.1). Within the narrative reward the players found information that sparked a player with system interaction (4.3.1) which resulted in another narrative reward (4.4.1). The narrative reward (4.4.1) contained a puzzle (4.5.1) which produced a link element (4.5.2).

The narrative reward (4.2.1) also contained another puzzle (4.5.3). When solved, the puzzle (4.5.3) gave the players a narrative reward (4.6.1). The narrative reward (4.6.1) contained another link element (4.7.1) and was also instrumental (as with narrative reward 3.9.2 and player with player interaction 2.29.1) in providing the players with another book title (narrative reward – book).

Week 3 was narrative heavy and produced various narrative components that added to the game context. The players were again responsible for assimilating the discovered narrative into the existing context.

5.3.5 Week 4 (4 March 2007 – 11 March 2007)

The diagram in Figure 73 shows the representation of Week 4 of “Year Zero”.

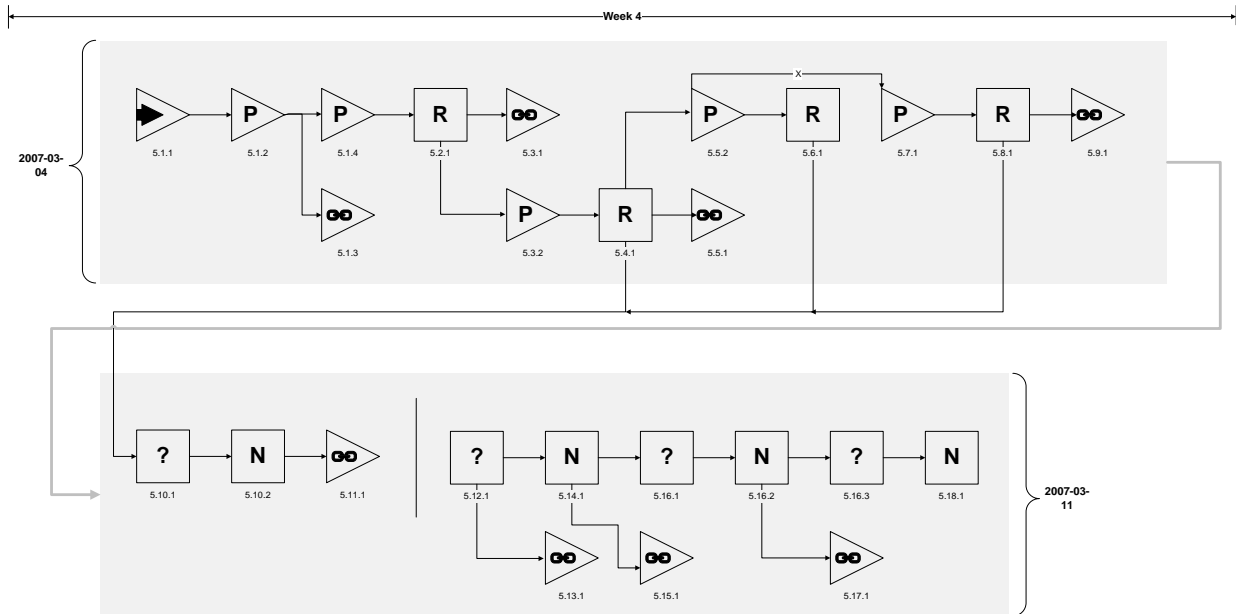


Figure 73: Week 4 (4 March 2007 – 11 March 2007).

A discovery at a concert produced a lead-in mechanism (5.1.1) which led to a puzzle (5.1.2). Solving the puzzle (5.1.2) the players found another link element (5.1.3). The lead-in mechanism (5.1.1) was categorised as such because even though it contained a NIN music video that was narrative related (narrative hook), the players had to investigate the artefact (the video) rather than interpreting the narrative imagery of the video itself.

The puzzle (5.1.2) also led to the discovery of another puzzle (5.1.4). Solving the puzzle the players received a narrative reward (5.2.1). Within the narrative reward (5.2.1) the players discovered a link element (5.3.1) as well as another puzzle (5.3.2). Solving the puzzle (5.3.2) the players received a narrative reward (5.4.1). The narrative reward (5.4.1) also contained a link element (5.5.1).

Analysing the narrative reward (5.4.1) the players found a puzzle (5.5.2) which, when solved, gave them a narrative reward (5.6.1). The players used the puzzle (5.3.2) and what it produced to discover another puzzle (5.7.1). Solving the puzzle (5.7.1) and feeding the result back into the other puzzle (5.3.2) gave the players the narrative reward (5.8.1). The players also found a link element (5.9.1) within the narrative reward (5.8.1).

The narrative provided to the players in the narrative rewards (5.4.1, 5.6.1, 5.8.1) led them to the narrative hook (5.10.1). Investigating the hook gave the players more narrative (5.10.2). Within this narrative the players also discovered another link element (5.11.1).

At a NIN concert the players discovered a narrative hook (5.12.1) which contained both a link element (5.13.1) as well as more narrative (5.14.1). Investigating the narrative the players yet again discovered another link element (5.15.1) as well as a narrative hook (5.16.1). The narrative hook (5.16.1) led to more narrative (5.16.2) which contained another narrative hook (5.16.3) and a link element (5.17.1). The final narrative hook (5.16.1) provided the players with more narrative (5.18.1).

Week 4 of “Year Zero” was very narrative heavy and most of the players’ time was spent in continuing to build narrative context.

5.3.6 Week 5 (12 March 2007 – 18 March 2007)

The diagram in Figure 74 shows the representation of Week 5 of “Year Zero”.

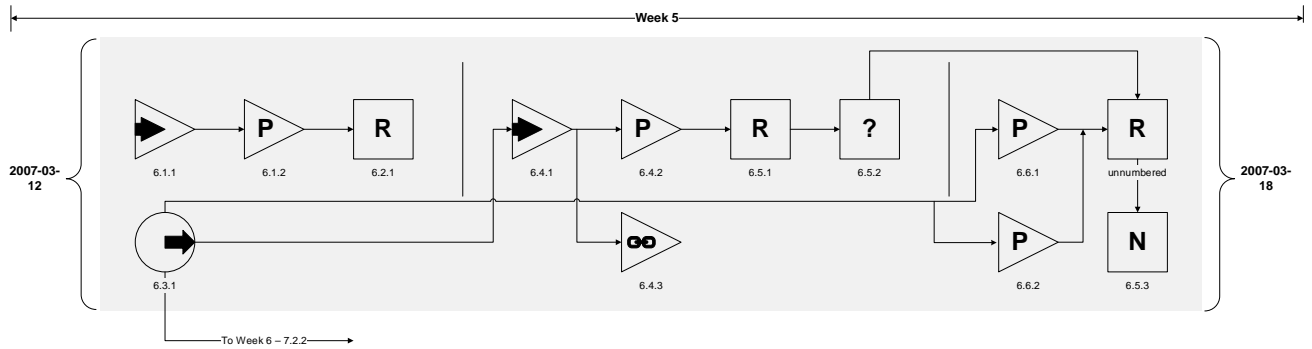


Figure 74: Week 5 (12 March 2007 – 18 March 2007).

A new item was released to the NIN fans at the beginning of Week 5. In the item the fans who were also players of the game found items (lead-in mechanism – 6.1.1) that linked them to a puzzle (6.1.2). Solving the puzzle the players received a narrative reward (6.2.1) which provided them with more game related narrative.

Because the NIN fans and the players of the game overlapped, the puppet masters could release information at NIN fan-related events and assume that the player community would gain access to that information. The puppet masters made use of this during Week 5 and 6 of the game (system with player interaction – 6.3.1). The information released resulted in the players discovering a lead-in mechanism (6.4.1) which led them to a puzzle (6.4.2) and a link element (6.4.3). Solving the puzzle the players found a narrative reward (6.5.1). This mechanism, used to release the narrative reward (6.5.1) also gave the players a narrative hook (6.5.2).

Two puzzles were also discovered during the NIN fan events (6.6.1 and 6.6.2). Both these puzzles produced more narrative content (unnumbered) in the form of wreckage/ shard pairs (see Chapter 4 – 4.2). When the players analysed the narrative rewards from the puzzles (6.6.1 and 6.6.2) they found more narrative (6.5.3). The narrative contained more book titles linking back to previous narrative rewards in earlier weeks.

5.3.7 Week 6 (19 March 2007 – 25 March 2007)

The diagram in Figure 75 shows the representation of Week 6 of “Year Zero”.

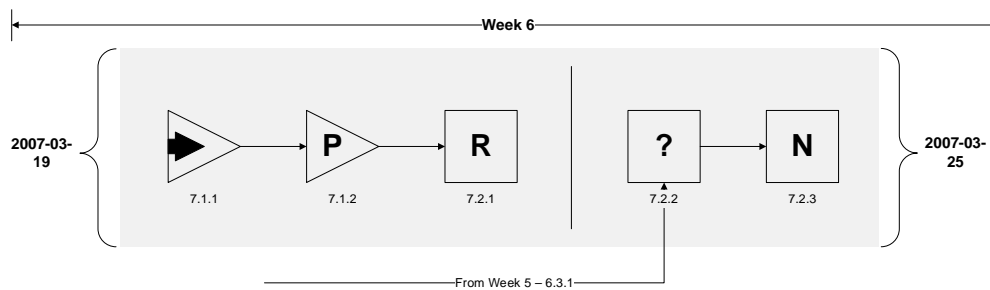


Figure 75: Week 6 (19 March 2007 – 25 March 2007).

Game content was released in one of the primary game locations which provided the players with a lead-in mechanism (7.1.1) that led the players to a puzzle (7.1.2) which gave them a narrative reward (7.2.1).

As stated in Week 5, the fan events provided the players with more narrative hooks (7.2.2) leading them to even more narrative content (7.2.3).

At this point in the game, the players had established a complex narrative context and were continuously growing it by participating in fan-related activities surrounding NIN. The community remained active in sharing the information as it was discovered and linking it into the cohesive narrative.

5.3.8 Week 7 (26 March 2007 – 1 April 2007)

The diagram in Figure 76 shows the representation of Week 7 of “Year Zero”.

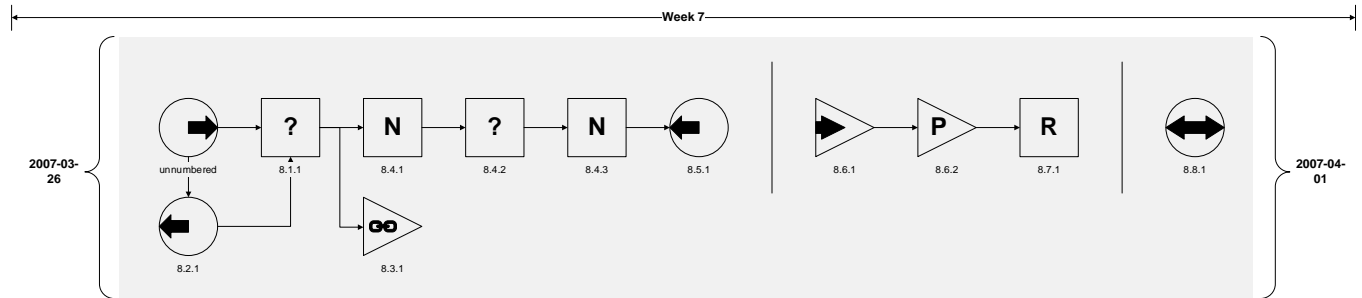


Figure 76: Week 7 (26 March 2007 – 1 April 2007).

At the beginning of Week 7 the players received a direct input from the game system (system with player interaction – unnumbered) which provided them with a narrative hook (8.1.1). The narrative hook (8.1.1) was also reinforced by player with system interaction (8.2.1). The narrative hook (8.1.1) contained a link element (8.3.1) as well as pointed the players to game narrative (8.4.1).

Analysing the content of the narrative piece (8.4.1) the players were pointed towards more narrative (8.4.3) via a narrative hook (8.4.2). The narrative piece (8.4.3) motivated the players to produce game related content through a player with system interaction (8.5.1).

A music single released during Week 7 provided the players with a lead-in mechanism (8.6.1) pointing them towards a puzzle (8.6.2). Solving the puzzle, the players gained access to a narrative reward (8.7.1).

The player with player interaction (8.8.1) specified in Chapter 4 – 4.2 was an observation made by the guide author (primary source for the game summary). The players discussed meta game actions and if they should be used or not. This is an example of the player community fully accepting the nature of the game and allowing the puppet masters to guide them through the game.

5.3.9 Week 8 (2 April 2007 – 8 April 2007)

The diagram in Figure 77 shows the representation of Week 8 of “Year Zero”.

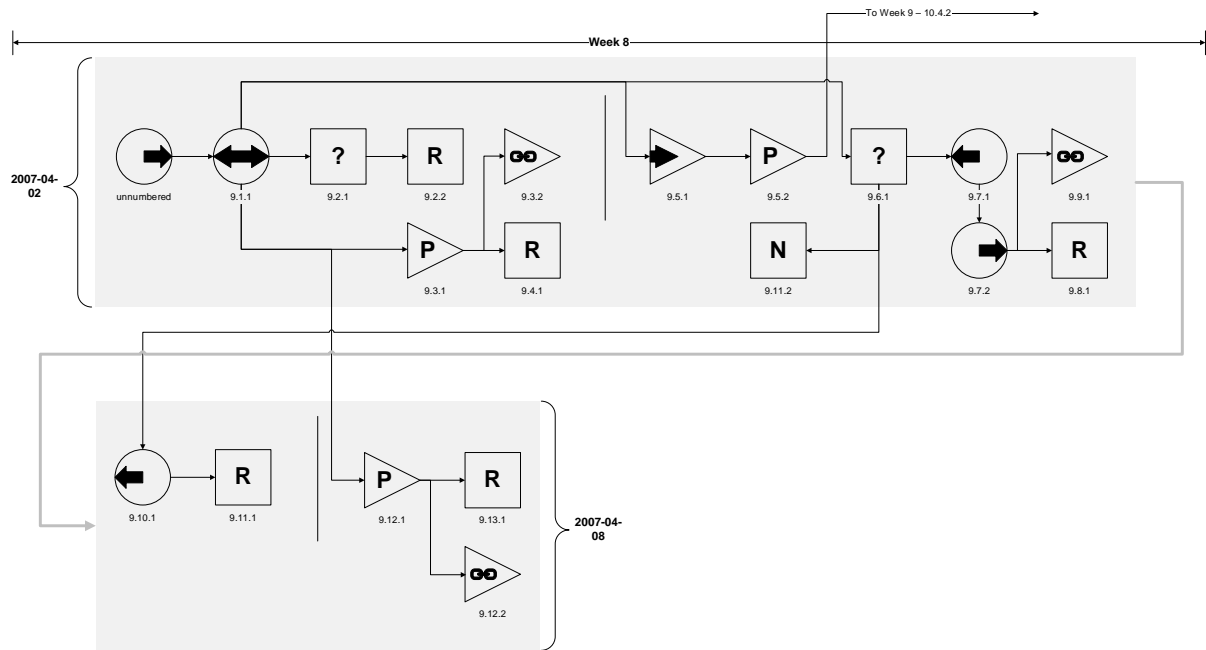


Figure 77: Week 8 (2 April 2007 – 8 April 2007).

An album for NIN was purchased by a single fan in Week 8 (system with player interaction – unnumbered). That fan was also actively participating in the game and immediately shared all the content of the album with the players of the game (player with player interaction – 9.1.1). Even though this content contained narrative pieces and narrative hooks, the phenomenon was primarily categorised as a player with player interaction, as the player sharing this information in its totality with the other players allowed Week 8 of the game to progress. The content will be referred to as the community share (9.1.1).

The content of the community share (9.1.1) contained a narrative hook (9.2.1) which when followed, provided the players with a narrative reward (9.2.2). This reward was purely for player interaction. No puzzle solving was required.

The players analysed the content of the community share (9.1.1) and found a puzzle (9.3.1). Solving the puzzle the players found a link element (9.3.2) as well as a narrative reward (9.4.1). The player who shared the content also discovered a lead-in mechanism (9.5.1) which led them to a puzzle (9.5.2). The solution of the puzzle (9.5.2) pointed the players to a potential narrative reward but at this time in the game, the content was not yet active. The community share (9.1.1) contained another narrative hook (9.6.1) which, like the result of the puzzle (9.5.2) was not yet active. The content only became active at a specific date in Week 8.

The active content of the narrative hook (9.6.1) resulted in opportunities for the players to interact directly with the system (9.7.1). The result of that interaction was the system providing the players information directly (9.7.2) in the form of a narrative reward (9.8.1) and a link element (9.9.1).

The narrative hook (9.6.1) also provided the players with an opportunity to directly interact with the system (9.10.1). Performing the interaction the players were rewarded with a narrative reward (9.11.1). The narrative hook (9.6.1) also contained a narrative piece (9.11.1) in the form of a book title (similar to earlier weeks).

The community share (9.1.1) contained yet another puzzle (9.12.1). Solving the puzzle the players were rewarded with a narrative reward (9.13.1) as well as a link element (9.12.2).

Week 8 primarily hinged on the effectiveness of the community of the game at this point. If the player who gained access to the content did not share the information with the rest of the community, the interactions would not have been as robust in Week 8 as they turned out to be. Most of the content of Week 8 stemmed out of that single interaction event with the community. The community then analysed the content and discovered the puzzles, interaction opportunities and pieces of narrative.

5.3.10 Week 9 (9 April 2007 – 15 April 2007)

The diagram in Figure 78 shows the representation of Week 9 of “Year Zero”.

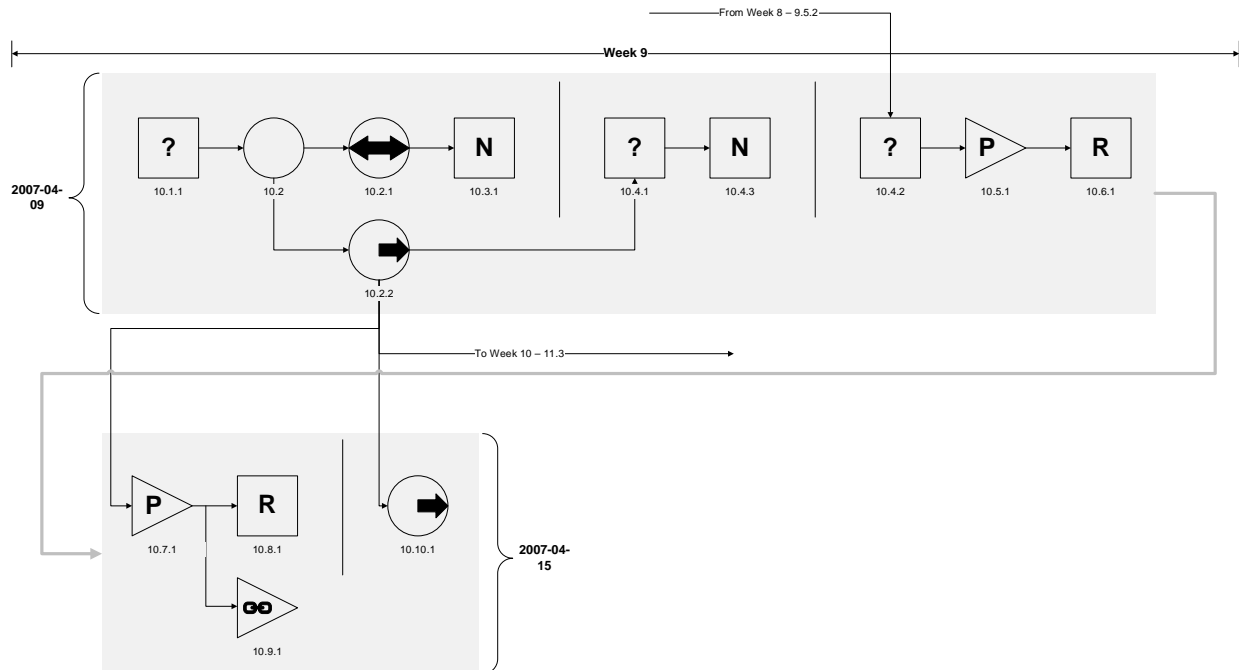


Figure 78: Week 9 (9 April 2007 – 15 April 2007).

Week 9 started off with the system providing the players with a narrative hook (10.1.1) which resulted in a community event (10.2). The community event (10.2) was divided into player with player interaction (10.2.1) and system with player interaction (10.2.2). The players' sharing the content (10.2.1) of the narrative hook (10.1.1) resulted in the discovery of a narrative piece (10.3.1). The phenomena categorized as a “community event” (10.2) was categorized as such because it could possibly contain all types of subcategories defined in Chapter 3. The specific phenomena mentioned (10.2.1 and 10.2.2) were pointed out because they were explicitly mentioned and had a direct influence on the reported phenomena directly afterwards.

The power play (10.2.2) produced various narrative pieces and puzzles through Week 9. The first was a narrative hook (10.4.1) which produced more narrative pieces (10.4.3). There was also a puzzle (10.7.1) that produced a narrative reward (10.8.1) as well as a link element (10.9.1). The puzzle (10.7.1) could also be found by analysing the community share (9.1.1) from Week 8. A system interaction (10.10.1) prompted specific information from the players who performed certain tasks at the power play (10.2.2). The purpose of the requested information was not yet clear in Week 9.

The activation of a narrative reward uncovered because of a puzzle in Week 8 (9.5.2) enabled the players to discover a narrative hook (10.4.2) which led them to another puzzle (10.5.1). Solving the puzzle the players found a narrative reward (10.6.1).

Week 9 highlighted the effectiveness of the “Year Zero” community once again. The players were capable of distributing and spreading specific information to the rest of the group which resulted in detailed analysis of all the content discovered.

5.3.11 Week 10 (16 April 2007 – 22 April 2007)

The diagram in Figure 79 shows the representation of Week 10 of “Year Zero”.

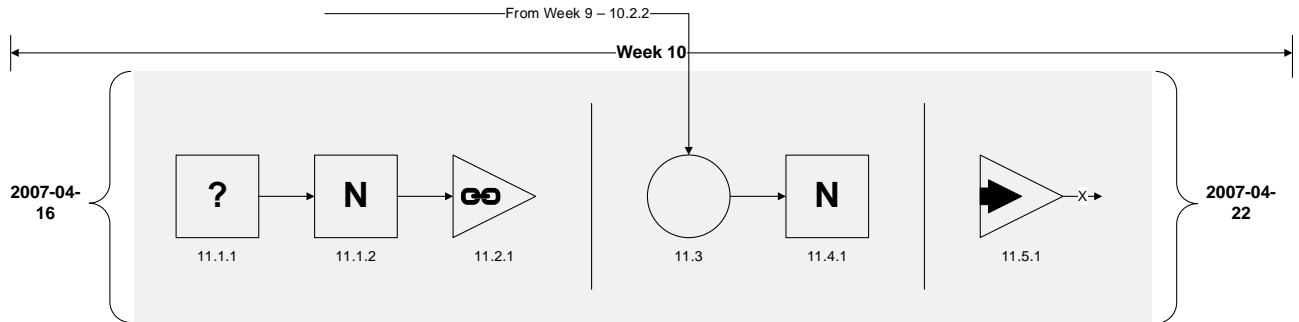


Figure 79: Week 10 (16 April 2007 – 22 April 2007).

Early in Week 10, a narrative hook (11.1.1) was discovered which led the players to a narrative piece (11.1.2). The narrative piece contained a link element (11.2.1).

The system with player interaction (10.2.2) in Week 9 produced a community event (11.3) in Week 10. The event (11.3) was a power play but without game actions (such as puzzles) required during the event. The players participated in an elaborate series of events where they were dragged along by the narrative. The power play (11.3) produced narrative content (11.4.1).

The players also discovered a lead-in mechanism (11.5.1) which was not used during the last week of the game. This phenomenon was the result of the puppet masters placing game content but never using it or the players not discovering the content at the correct time. The players shaped and formed the game and created their own content. It is important to mention this phenomenon as it links to the dynamic nature of an ARG.

5.3.12 Week 11 (23 April 2007 – 29 April 2007)

The diagram in Figure 80 shows the representation of Week 11 of “Year Zero”.

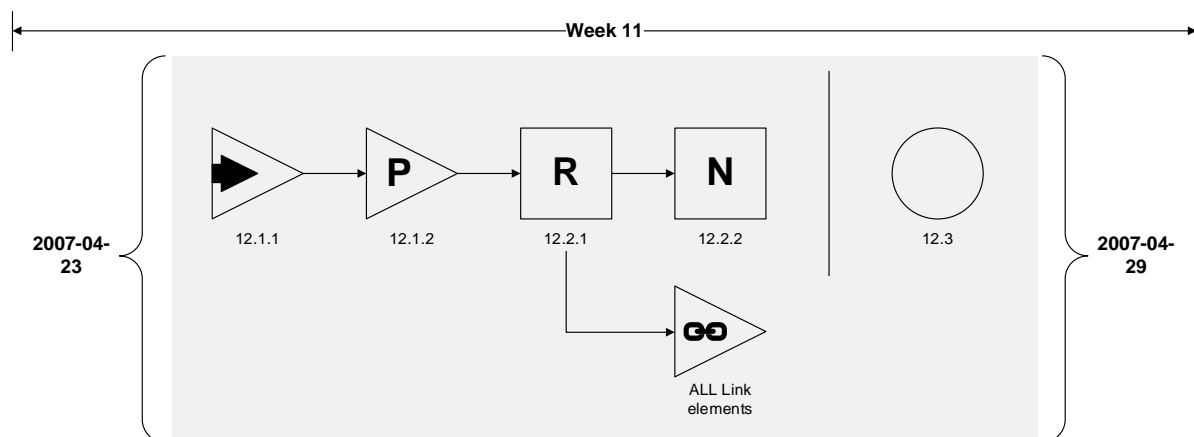


Figure 80: Week 11 (23 April 2007 – 29 April 2007).

In the final week of “Year Zero, the players discovered a lead-in mechanism (12.1.1) which led them to a puzzle (12.1.2). Solving the puzzle produced a narrative reward (12.2.1). The reward produced

large amount of narrative content (12.2.2). The most important element of the reward was the numbering used to order and archive the content. All the numbers corresponded with the link elements discovered throughout the game. The link elements served as anchor points through the narrative of the game. The numbers corresponded with events, stories and individuals revealed in the narrative reward (12.2.1) discovered in Week 11.

The players also found pages with references to them in the narrative reward (12.2.1). The inclusion of the players in such a way by the puppet masters was categorised as a community phenomenon as it served as a reward for the players' collaboration and in-depth participation in the narrative of the game. This phenomenon in effect made the players officially part of the narrative.

5.3.13 Conclusion

“Year Zero” was a complex game that relied heavily on the community’s ability to share and spread game information. Game events hinged on the ability of a small number of players sharing information with the larger community which would result in more in-depth analysis and in the game progressing.

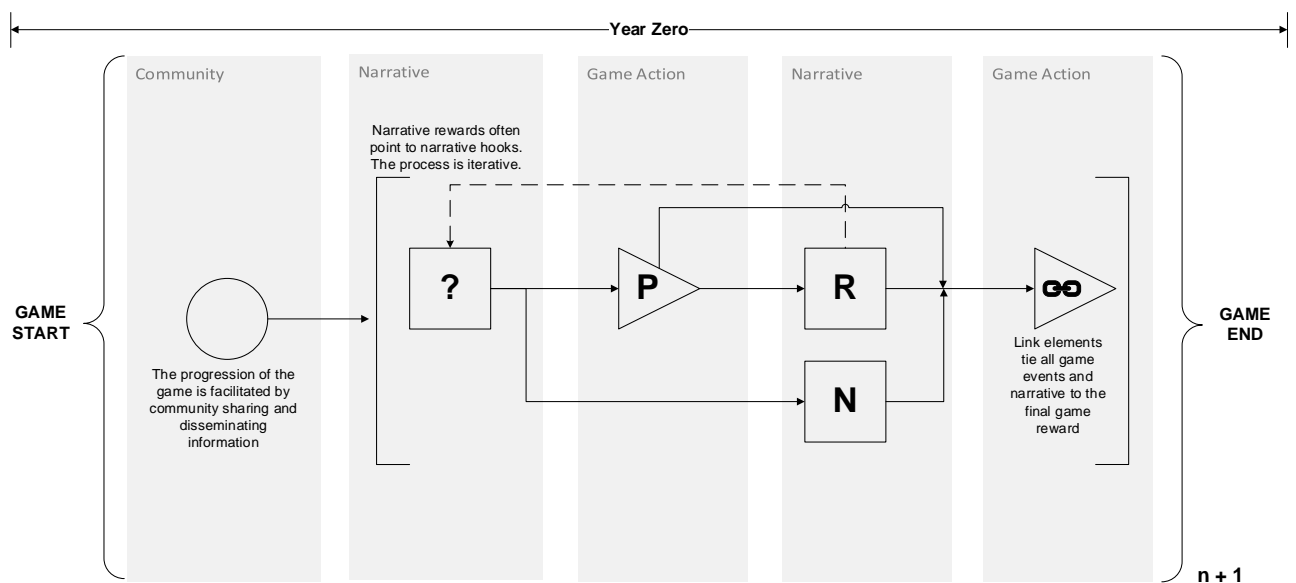


Figure 81: Summary diagram for Year Zero.

The diagram in Figure 81 shows the summarized representation of the game phenomenon. The game relied heavily on the narrative pieces, rewards and hooks being linked together by the players. The players had to construct the narrative from various pieces. The unique element of the game was the usage of the link element to provide reference points for specific game events and narrative.

5.4 Grassroots ARG – “Number 13”

5.4.1 Introduction

In comparison with the other games, “Number 13” was a shorter and simpler game. The game had a small number of players and only stretched for six weeks. In comparison with the other two cases (“I Love Bees” and “Year Zero”) that is a significantly shorter running time. The game was also simpler in terms of community engagement, specifically around the collective intelligence requirement. “Number 13” puzzles did require various expertise but the target players had access to those skills. The puzzles could also be completed easily by individuals. The community engagement and collaboration was primarily focused around the “power plays” (McGonigal 2007a) and required players to work

together as a group to complete physical tasks such as scavenger hunts, group coordination and sharing information.

The numbering in the diagrams refers back to chapter 4. The following sections' numbering in the diagrams requires the suffix 4.3 (see Chapter 4 – 4.3).

5.4.2 Week 1 (12 April 2010 – 14 April 2010) – The rabbit hole.

The diagram in Figure 82 shows the representation of Week 1 of “Number 13”.

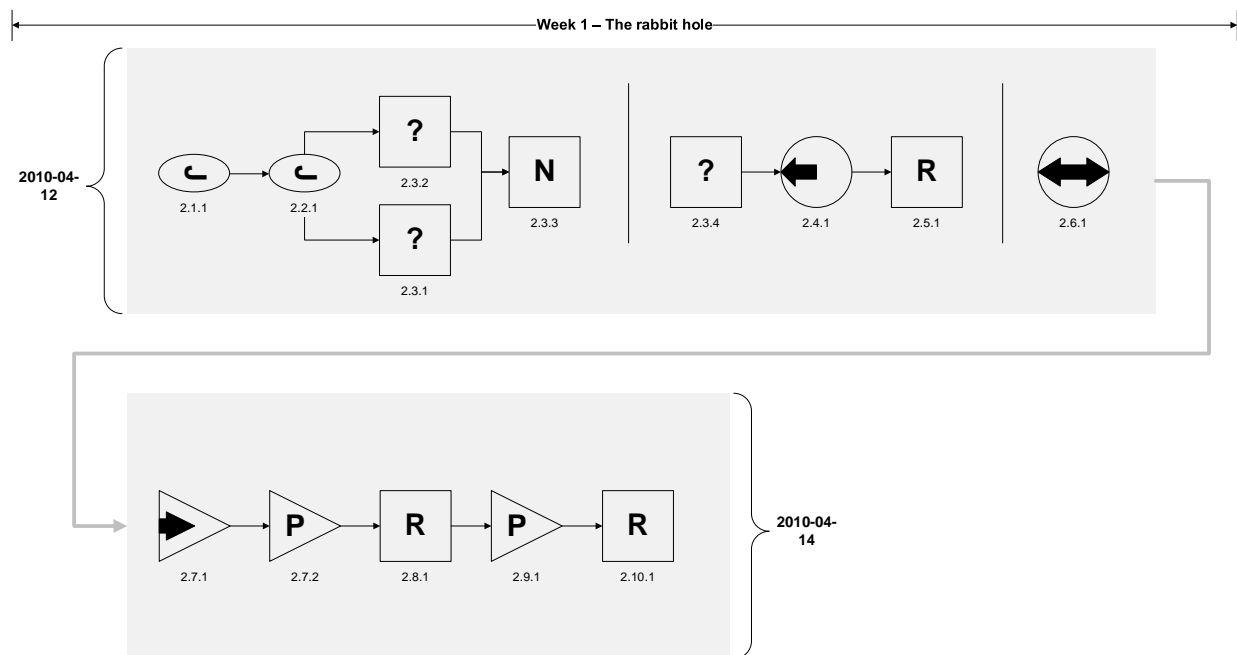


Figure 82: Week 1 (12 April 2010 – 14 April 2010) - The rabbit hole.

The hooks, 2.1.1 and 2.2.1, were both classified as hooks which fall under the rabbit hole category. Their primary purpose was to peak the players' interest and pull them into the game. The hook (2.1.1) was considered to be the primary rabbit hole of the game. The other hook (2.2.1) built expanded on 2.1.1. The narrative hooks, 2.3.2 and 2.3.1, were categorized as such due to the fact that they led the players to a piece of narrative (2.3.3). They were obvious pieces of information that the player could simply find by investigating the site. The narrative hook (2.3.2) was a telephone number found on a poster displayed around the campus. Calling the number gave players a piece of narrative. The narrative hook (2.3.1) was information found on the “hacked” website which also led to a piece of narrative. The narrative piece (2.3.3) provided the players with a source of information that gave more game context as well as a starting point.

The narrative hook (2.3.4) was categorized as such due to the fact that it only required the players to explore the website. Selecting text on the site was considered to be provided information and not a game action. The narrative hook (2.3.4), the discovery of an email address, led to a player with system interaction (2.4.1) which consisted of the players sending a game character an email. In turn the players received an email (auto reply) from this address giving them a narrative reward (2.5.1) in the form of ASCII art that helped to set the context of the game.

During this time in the game the players discussed amongst themselves how they would communicate and centralize their communication with one another. This was categorized as a player with player interaction (2.6.1). This action allowed the players to archive game content as well as discuss game related puzzles and content. The wiki page allowed the players to theorize on game

narrative and in turn create their own contributory narrative. The wiki page was used throughout the game as the primary communication point. The players also created a mailing list which they used for real time discussion.

The discovery of the 13.php page was considered to be a lead-in mechanism (2.7.1) as it led the players to a puzzle (2.7.2). Solving this puzzle (2.7.2) led the players to a narrative reward (2.8.1). The narrative reward (2.8.1) contained a puzzle (2.9.1). Solving this puzzle provided the players with another narrative reward (2.10.1).

The analysis of the first week of “Number 13” already displayed the repetition of a specific structure: the lead-in mechanism leading to a puzzle which, when solved, provides a narrative reward. The use of narrative and narrative rewards to provide links to more puzzles was also seen in this analysis. The progression of the components (one leading to another) is driven by the players’ interaction with the game content. The reported interaction components were explicitly mentioned because they resulted in something specific during this time in the game.

5.4.3 Week 2 (12 April 2010 – 16 April 2010) – The paint event

The diagram in Figure 83 shows the representation of Week 2 of “Number 13”.

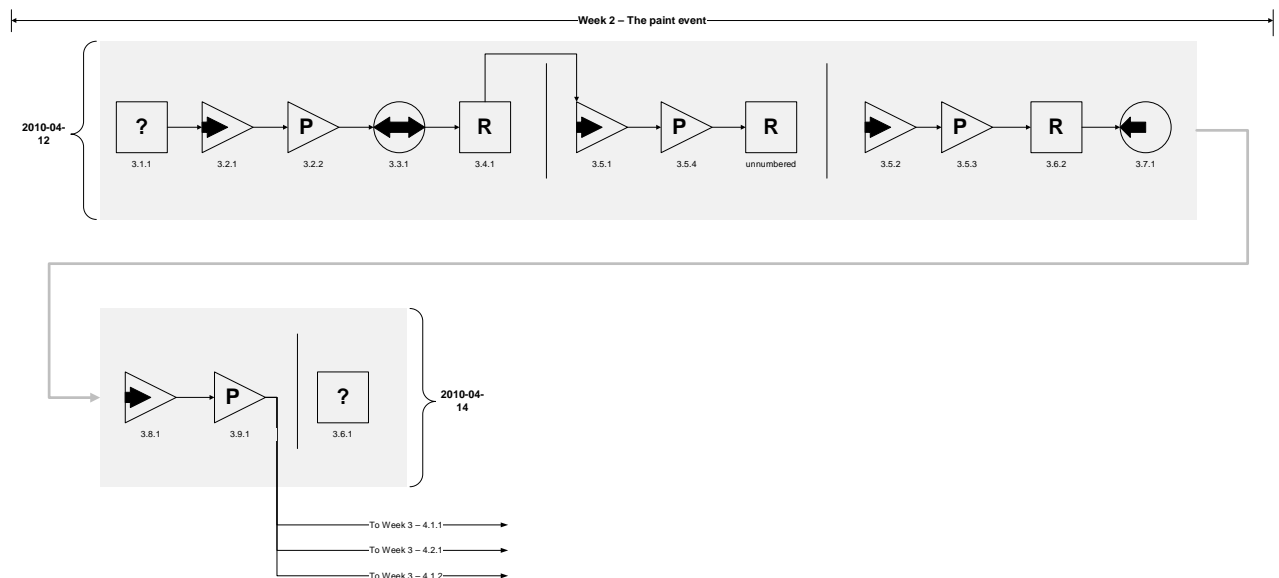


Figure 83: Week 2 (12 April 2010 – 16 April 2010) - The paint event.

The narrative hook (3.1.1) was classified as such because it was a piece of narrative given to the players on a specific day. The hook (3.1.1) led the players to a power play that occurred on a specific day. Arriving at a location the players were provided with instructions pointing them to a new location. This was a lead-in mechanism (3.2.1) leading the players to a puzzle (3.2.2). The puzzle (3.2.2) resulted in the players having to interact with one another to build community and collaborate (3.3.1). After completing the challenge the players were rewarded with a disc containing a video. This was a narrative reward (3.4.1) because it expanded the narrative of the game (provided context).

The complete narrative reward (3.4.1) contained a reference (lead-in mechanism – 3.5.1) to a game puzzle (3.5.4). Solving the puzzle (3.5.4) provided the players with the name of the disc the players received (unnumbered narrative reward element – see Figure 83).

The lead-in mechanism (3.5.2) was a site update in the form of encrypted pages (puzzle – 3.5.4). The deciphered pages were the narrative reward (3.6.2). The players also decided to contact a game director and inform him that they had deciphered the pages (player with system interaction – 3.7.1).

With the discovery of the encrypted pages the players also found a new count-down timer on the website. The timer was categorised as a narrative hook (3.6.1).

A new page on the website (lead-in mechanism – 3.8.1) introduced a new puzzle (3.9.1) to the players. This puzzle resulted in multiple phenomena which occurred in Week 3. The puzzle (3.9.1) was not solved in Week 2.

5.4.4 Week 3 (19 April 2010 – 23 April 2010) – Picture/location hunting

The diagram in Figure 84 shows the representation of Week 3 of “Number 13”.

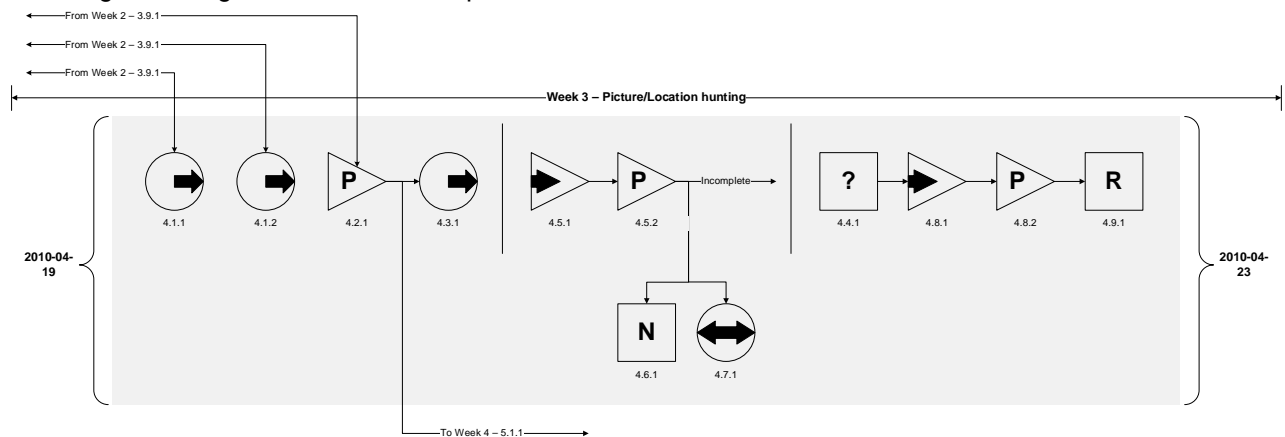


Figure 84: Week 3 (19 April 2010 – 23 April 2010) - Picture/Location hunting.

The puppet masters produced two clues to the puzzle (3.9.1) in Week 3 where they interacted with the players through the website (system with player – 4.1.1 and system with player 4.1.2). These were considered community interactions rather than narrative components as they did not lead to new puzzles. They were clues for an existing puzzle (3.9.1). They were also primarily classified as system with player interaction as the initial force behind the community discussion prompted by the system producing input to the players.

After producing the system with player interactions (4.1.1 and 4.1.2) the puppet masters produced another puzzle (4.2.1). By solving it, the players would have found the method to solve the puzzle (3.9.1) in Week 2. The difference between the puzzle (4.2.1) and the system with player interaction (4.1.2) was that the system interaction only required interpretation (4 pieces form 1) where the puzzle (4.2.1) was a mathematical representation that had to be solved to produce the logic for the puzzle in Week 2 (3.9.1). The puppet masters inevitably had to provide another clue for the new puzzle (4.2.1) in the form of a system with player interaction (4.3.1). No solution was found for either 4.3.1 or 3.9.1 in Week 3.

The narrative hook (3.6.1) from Week 2 produced a new narrative hook (4.4.1) in Week 3. The narrative hook (4.4.1) pointed to the power play of Week 3 which started with the lead-in mechanism (4.8.1). The lead-in mechanism (4.8.1) in turn directed the players to the puzzle (4.8.2). Solving that the players were rewarded with narrative (4.9.1). The players again had to collaborate to solve the power play and construct the narrative reward. By finding the pieces and putting them together the players were able to produce more narrative context for the game.

During the week new encrypted pages appeared on the website (lead-in mechanisms – 4.5.1) which led to the decryption of the pages. Each of these pages contained a new puzzle (4.5.2). These puzzles were not solved during the game. The puzzles (4.5.2) prompted the player with player interaction (4.7.1) which was a community discussion about the difficulty of the puzzles and the lack of hints from the puppet masters. This prompted the puppet masters to update the pages containing

the puzzles (4.5.2) with narrative pieces (4.6.1) that would serve as hints for the solutions. The puzzles remained unsolved.

5.4.5 Week 4 (26 April 2010 – 30 April 2010) – “Have you seen her?” puzzle hunting

The diagram in Figure 85 shows the representation of Week 4 of “Number 13”.

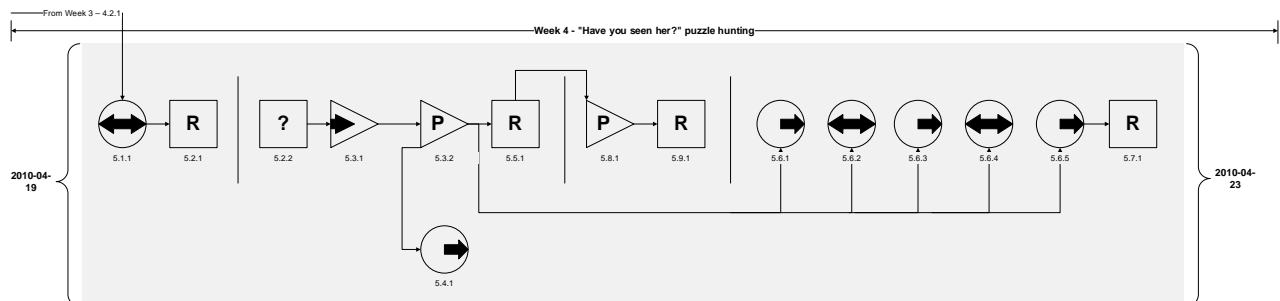


Figure 85: Week 4 (26 April 2010 – 30 April 2010) – “Have you seen her?” puzzle hunting.

The puzzle (4.2.1) that was created as a hint for the puzzle (3.9.1) in Week 2 was solved because of a single player finding a solution and sharing it with the rest of the players (5.1.1). The solution led to a narrative reward (5.2.1).

The narrative reward (4.9.1) in Week 3 also contained a new timer which can also be described as a narrative hook. The hook in the narrative reward led the players to another narrative hook (5.2.2) which, as in previous weeks, pointed the players to a lead-in mechanism (5.3.1) which was the start of a power play (as in previous weeks). The lead-in mechanism (5.3.1) led to a puzzle (5.3.2). The solution of the puzzle required the players continuously, during the power play, to give feedback to the game system. The primary purpose of this mechanic in the power play was to provide the players with continuous feedback and in that way, guide their actions (system with player interaction – 5.4.1). Solving the puzzle (5.3.2) led the players to the narrative reward (5.5.1).

The narrative reward (5.5.1) also contained a puzzle (5.8.1) which, when solved, provided the players more narrative in the form of a narrative reward (5.9.1).

The process in terms of community interaction while solving the puzzle (5.3.2) was very visible in this case because of what the players reported in the wiki (the guide equivalent for “Number 13”). The players did not arrive for the puzzle (5.3.2) which resulted in the puppet masters prompting the players to attend and solve the problem (system with player – 5.6.1, system with player – 5.6.3). Because of this prompting from the system there was more interaction between the players (player with player – 5.6.2, player with player – 5.6.4). The whole system and player interaction resulted in the players solving the puzzle (5.3.2) as well as receiving the reward (5.5.1) but also resulted in the players receiving another narrative reward (5.7.1) because of their response to the system prompting.

The last part of the Week 4 was a good example of how player action and interaction resulted in player created narrative (player as producer).

5.4.6 Week 5 (3 May 2010 – 7 May 2010) – The lie

The diagram in Figure 86 shows the representation of Week 5 of “Number 13”.

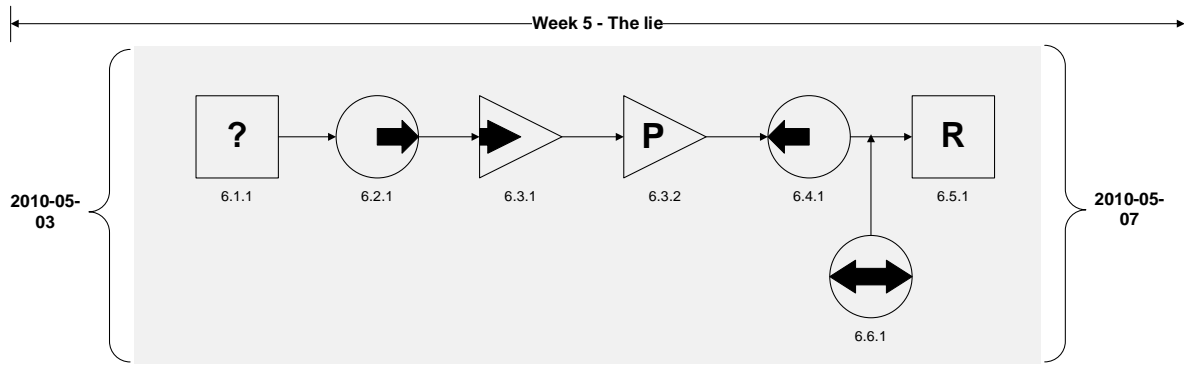


Figure 86: Week 5 (3 May 2010 – 7 May 2010) – The lie.

The narrative hook (6.1.1) again provided the players with a countdown timer. When the timer ran out the players were pointed to a new lead-in mechanism (6.3.1) but between the time of the timer running out and the power play taking place, a system interaction (6.2.1) resulted in some of the players receiving different information. This interaction changed the instruction of the narrative hook (6.1.1). As in previous weeks in the game, the lead-in mechanism (6.3.1) pointed the players to the puzzle (6.3.2). The puzzle (6.3.2) was a test of the player community to see how effective they shared information amongst themselves to correct miss information (player with player – 6.6.1). The players were provided with an opportunity to directly interact with a game character (player with system – 6.4.1). After completing the puzzle (6.3.2) and interacting with the system (6.4.1) the players were provided with the narrative reward (6.5.1).

5.4.7 Week 6 (10 May 2010 – 14 May 2010) – The ritual

The diagram in Figure 87 shows the representation of Week 6 of “Number 13”.

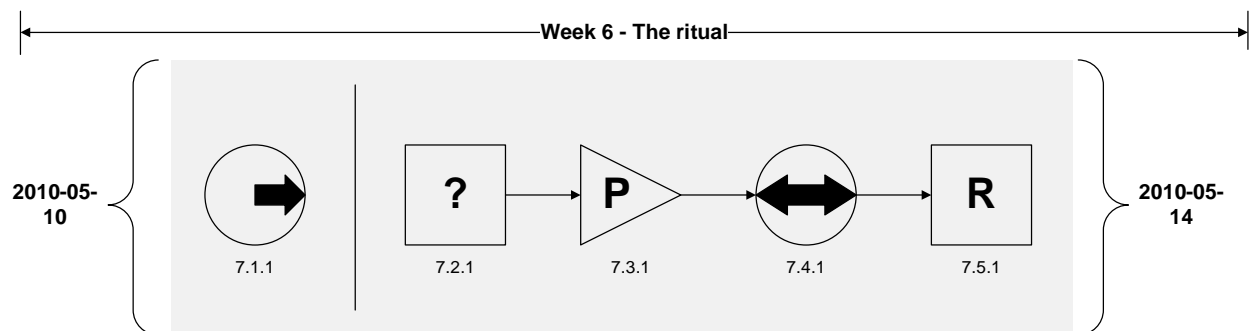


Figure 87: Week 6 (10 May 2010 – 14 May 2010) - The ritual.

In Week 6, unlike all the previous weeks, the players did not receive a narrative hook. Instead there was direct communication from the system to the players (7.1.1). The interaction with the players (7.1.1) together with the narrative hook (7.2.1) provided the players with enough information to engage with the puzzle (7.3.1). The puzzle (7.3.1) was again a community collaboration focused power play (player with player – 7.4.1). Completing the puzzle (7.3.1) the players received the final reward for the game (narrative reward – 7.5.1)

5.4.8 Conclusion

“Number 13” was a simple game compared to other larger ARGs. The game, based on the method of analysis used during this study, showed a repeated structure represented in the diagram in Figure 88.

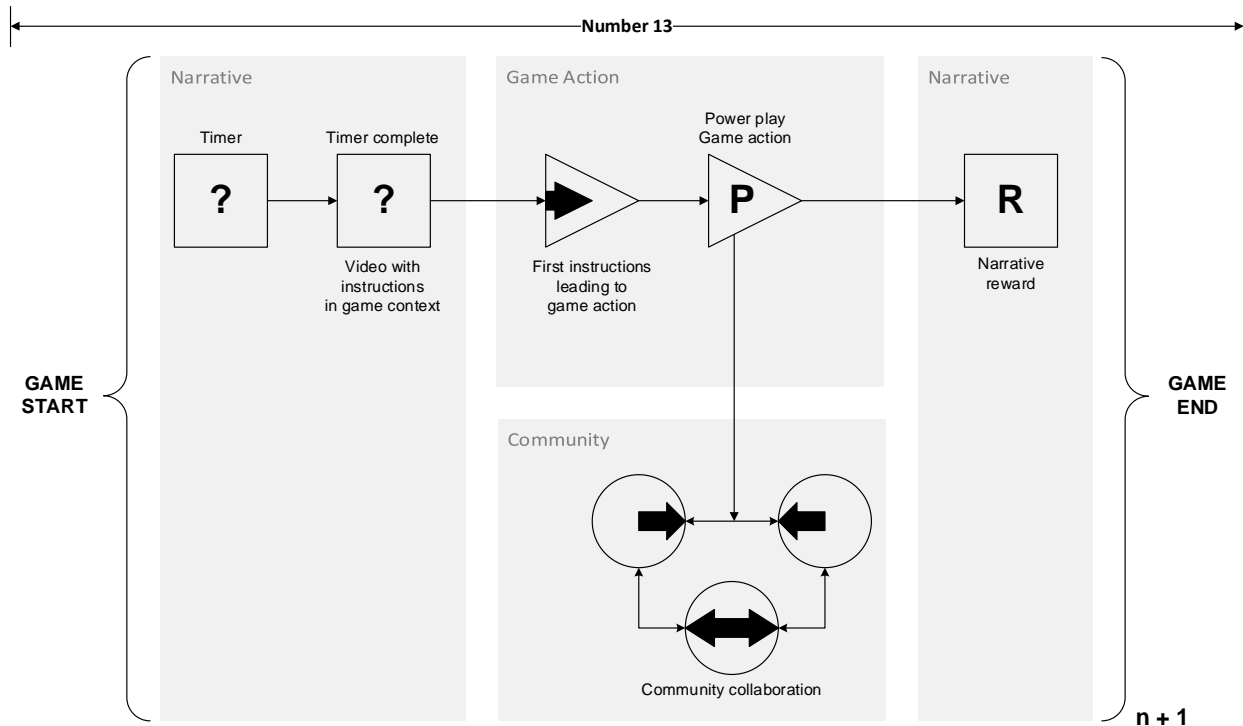


Figure 88: Summary diagram for Number 13.

The structure in Figure 88 shows, primarily, a narrative hook, pointing to another narrative hook. These two phenomena are spread over time between the one week and the next week of the game, providing “markers” for the players to follow over time. The second narrative hook then points to a lead-in mechanism which, in the case of “Number 13” was usually the first part of the power play. The lead-in mechanism then points the players to a puzzle which, when solved, provided the players with a narrative reward. The puzzle phenomenon in “Number 13” also contained descriptions of community interaction. This was primarily due to the game wiki reporting these interactions.

5.5 Summary

Chapter 5 provided analysis of each game based on the categorisation shown in Chapter 4. The categories and their subcategories were a result of the compilation of the game summaries and the comparative analysis discussed in Chapter 3.

In this chapter each game was discussed based on the categories in Chapter 4. The relationships and linking between each phenomenon within each game was highlighted. Each week in each game provided a graph illustrating these relationships.

At the end of each game, a summary diagram was provided that abstractly represented the phenomenon and their relationships with one another, within the specific game. These summary diagrams will serve as the basis of the framework that this study proposes to define.

The next chapter will provide a combination of the three games’ summary diagrams as well as the proposed framework.

6 Chapter 6 – Conclusion

6.1 Introduction

Chapter 6 will conclude the study by providing summative information on the method followed during this study, then provide background information on conceptual frameworks and why developing said framework as the conclusion to the study is a valid approach. This will aid in answering the primary problem statement; how can a conceptual framework for ARGs, based on game design theory, be developed?

The development of the conceptual framework will be done by combining the separate analyses of the previous chapter into a singular framework, providing rationale for the generalisation and combination of the phenomena, the constructs they are contained within and the relationships between the phenomena and the constructs.

The chapter will conclude with answering the research questions provided in chapter 1. Future work will be discussed with the proposed framework as the focus.

6.2 Summary of the study

The study can be summarised in the following steps:

- This research aimed to develop a conceptual framework based on existing game design theory.
- The literature of game studies as well as ARGs were consulted to construct a theoretical framework. The literature review informed the analysis of the game summaries.
- The game summaries were analysed based on the theory and the researchers understanding of the theory. Case studies were done on three ARG. The case studies produced the game summaries. The game summaries were analysed using constant comparative analysis.
- The case study summaries for each ARG – Each game was analysed as a case study. Details of the methodology were discussed in Chapter 3. The games were then compiled into narrative summaries with a timeline for each and presented in Chapter 4.
- The analysis of the summaries – While the summaries were constructed, categories and subcategories were identified into which each phenomenon could fit. These categories were produced and refined by making use of constant comparative analysis. The summaries in Chapter 4 also contained the categorisation.
- Establishing the relationships – The second phase of analysis was the definition and explanation of the relationships between the phenomena. In each game summary the game was broken into weeks. Each week provided a series of constructs that illustrated the relationships between the phenomena. At the end of each game's second analysis, a generalised construct was developed that would represent the game. The second analysis was provided in Chapter 5.
- Developing the framework – The final step of the study was to develop a framework by combining the three generalised constructs. To explain the development of the framework, explanation of conceptual frameworks was required. This explanation is provided in this chapter.

The study contains various steps of analysis and study that would culminate in an understanding of the phenomenon found in ARGs, their relationships and how the games differ from one another but also, where they are similar. The framework aims to provide a better understanding about ARGs from literature and the case studies through qualitative analysis. The understanding gained from the framework can be used in various ways which will be discussed later in this chapter.

6.3 A conceptual framework

6.3.1 What is a conceptual framework?

First, before developing the framework, an understanding of what a conceptual framework is needs to be gathered from the literature. Miles, Huberman and Saldana (2013:20) define a conceptual framework as:

A conceptual framework explains, either graphically or in narrative form, the main thing to be studied - the key factors, variables, or constructs - and the presumed interrelationships among them.

(Miles, Huberman & Saldana 2013:20)

According to Miles, Huberman and Saldana (2013:20), a conceptual framework is very selective. The researcher decides which variables are important, which relationships are the most meaningful for these variables as well as what data should be collected and analysed to support these assertions.

Jabareen (2009) describes a conceptual framework as a construct in which each of the concepts plays an integral role, developed through the process of qualitative analysis. Jabareen describes the purpose of a conceptual framework as a tool that provides understanding and an interpretive approach to social reality (Jabareen 2009).

Maxwell gives the following definition for conceptual frameworks:

The most important thing to understand about your conceptual framework is that it is primarily a conception or model of what is out there that you plan to study, and of what is going on with these things and why—a tentative theory of the phenomena that you are investigating.

(Maxwell 2012:39)

Maxwell's focus is on the theoretical nature of the conceptual framework; that it is "constructed" from "theory" (Maxwell 2012). Maxwell describes theory as a set of concepts and ideas with proposed relationships between them where two concepts and a single relationship is considered to be the simplest form of theory (Maxwell 2012:49).

Finally, Ravitch and Riggan (2012:10) build their definition from Maxwell's and Miles, Huberman and Saldana's definitions. They describe a conceptual framework as having the following aim: to identify presumed relationships among key factors or constructs and to identify the justification of these presumptions coming from multiple sources. These sources can include the researcher's own work or tentative theories, established theories or empirical work in the research literature (Ravitch & Riggan 2012:10).

The following elements influence the creation of the conceptual framework:

- Personal interest – Ravitch and Riggan describe it as "the researcher's curiosities, biases and ideological commitments, theories of action (why things happen) and epistemological assumptions (what is useful or valuable knowledge)" (2012:10). Maxwell calls it the researchers "experiential knowledge" (2012:44).
- Topical research – Ravitch and Riggan describe the formal work that focuses on the topic of interest, the formal literature related to the topic (2012:12). Maxwell describes this element as the "existing theories and research" (2012:44).
- Theoretical framework – The Oxford definition of a framework reads: "a structure composed of parts frame together, esp. one designed for inclosing or supporting anything; a frame or skeleton" (Oxford Dictionary 2014c). Ravitch and Riggan state that the parts are the theories

and the thing that is being supported is the relationships embedded in the conceptual framework (2012:12). The theoretical framework is built from the empirical work found in the scholarly literature. Maxwell calls this element the “exploratory work” (2012:44).

In summary, a conceptual framework is used to describe what is being studied. The framework is used to identify which concepts will be focused on as well as to describe the relationship between these concepts (variables, constructs). A conceptual framework is constructed from qualitative analysis and can take the shape of a graphical model. The construction of the conceptual framework is aided by the theoretical framework, topical research and personal interest (see Figure 89). The theoretical framework is what is used to describe the parts (based on the theory) and the relationship between the parts. The topical research is what informs the theory and is used as the basis of the work; the salient issues found in the existing work. Finally, the personal interest and knowledge of the researcher is based on the researchers experience, context and understanding of these elements.

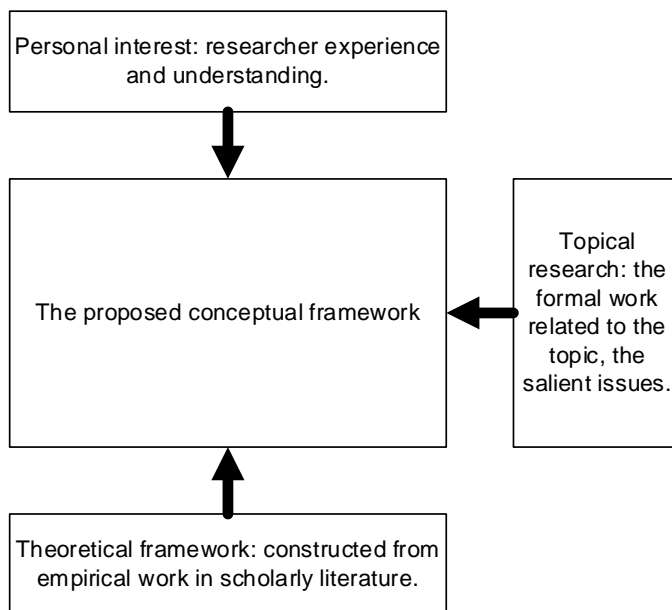


Figure 89: The three elements aiding the construction of the conceptual framework.

6.3.2 Developing the conceptual framework

The framework for this study will be developed as the result of the complete study. In research, the conceptual framework is used as the starting point for research, or can be produced from pilot studies to support further study. The framework developed as a result of this study is no different. It will and should be used as a tool for further study of ARGs. The contribution in just producing the framework as a result of this study is to show the methodology used to develop this framework and bring to light the motivation of the choices made in selecting and categorising the phenomena as well as describing the relationships.

The source of the above-mentioned elements of this conceptual framework was provided in the chapters of this study.

Elements influencing the construction of the conceptual framework	The source of the element
Personal interest	Through the compilation of the summaries for each ARG, the researcher developed an interest in the different components that

	comprise an ARG. The researcher developed personal theories on what these components (concepts, phenomena) were and how they came to exist (theory of action). The focus of the analysis also developed from this phase of the research. What was considered as valuable knowledge for the sake of developing this framework was decided by the compilation of the summaries.
Topical research	The salient issues in the existing literature from both ARGs and game design theory were identified by extensive review of the scholarly literature. Existing theories such as the collective intelligence, the interactive nature of the narrative, the player as producer of content are but some of the theories used as the basis for the analysis.
Theoretical framework	The theoretical framework was developed from reviewing the literature but was further refined from the categories identified through the analysis of the game summaries. Each of the identified categories and subcategories that were used in grouping the phenomena have roots in the existing theory and work. The identification of the relationships between these phenomena was made possible by the existing theory (topical work) as well as the analysis of the games (exploratory work).

Table 8: The elements of the conceptual framework and the source of each.

6.4 Results of the study

The study developed iteratively from the raw data up to the constructs for each game. The results of each phase will be reported here in summary to simplify the explanation of the final conceptual framework. The main research question of the study is:

How can a conceptual framework for ARGs, based on game design theory, be developed?

To answer the main question of the study the following sections will provide answers to the sub-questions.

6.4.1 Salient issues in the literature

This section attempts to answer the sub-questions of the main research question from the existing literature. Each following section will provide insight into the relevant question.

6.4.1.1 How can the components/categories of an ARG be identified?

Chapter 2 discussed the literature that informed this study. The literature was examined from two different perspectives: games and alternate reality games. Firstly an understanding of game design theory was established. The theory used in game studies was used to inform the review of the literature specific to ARGs. From the literature discussing game design and specifically defining games, the following elements were identified to be found in most games: Games have rules that are followed by participants or players; the players are engaged in an artificial conflict created by the game which requires effort from the players to overcome; during the play of the game the players are provided with outcomes by the game which in turn influences their decisions. The game is influenced by various factors, some of which are where the game is played as well as the purpose of the game. More detail can be found in Chapter 2 - 2.2.1 Defining games. Table 3 in the section provides an overview of the elements of a game. The definition of a game then informed the investigation of

specific components within game design that may be of importance in the study of ARGs. An in-depth investigation into game mechanics, goals, rewards and narrative was done to establish how these components are used within games. The understanding of these components was required to establish how they are implemented in ARGs and if the implementation differs from normal games to ARGs. A more detailed discussion can be found in Chapter 2 – 2.2.2 Components of games.

The components and their investigation informed the focus of the literature when defining ARGs. In Chapter 2 – 2.3.1 Defining Alternate Reality Games, certain characteristics of ARGs were identified. They include the fact that ARGs make use of collective intelligence in solving the game challenges, use multiple media for gameplay, are collaborative in nature and make use of collective play. ARGs are also immersive games and are adept at integrating reality with the games' alternate reality. ARGs also make use of unlimited game space and are played in real time. It is also important to note that the puzzles and challenges within an ARG require the players to collaborate and overcome the obstacles together (collaborative play). Finally, ARGs are driven by their narrative. The players continuously interact with the game narrative in the form of rewards, game context, player created content and sharing the game narrative and game related information. These characteristics can be found in Table 4: Characteristics of an ARG. in Chapter 2.

To answering the question, how can the components/categories of an ARG be identified, the literature on game studies was investigated and the elements of the game definition informed the next step of investigation. Following the same steps for ARGs provided characteristics of an ARG. Combining the theory from game design and ARGs provided an understanding of the existing components within ARGs and how they relate to game design theory. It also provided the researcher with certain broad categories which could be used during the analysis of previously played ARGs.

6.4.1.2 What components/categories were identified?

The in-depth discussion of the literature provided insight into the following components: narrative, game action and community and interaction. These three components are the same components that informed the analysis in Chapter 5. Even though the components are identical to the three primary categories produced by the analysis, it must be stated that the analysis of the summaries did deliver the three categories. The categories were named the same to provide understanding and context of the researcher's context which influence the analysis.

By answering the previous question from the literature, a table was compiled to show the components of both ARGs and games and how they match one another. These components are then categorised based on their similarities and the discussion of each from the literature. Firstly, the game design literature and analysis produced the following table:

		Games
Narrative component	Game narrative/ Story world	<ul style="list-style-type: none"> • Artificial conflict - The narrative assist in the creation of conflict. • Computer generated world.
Game Action	Obstacles, goals and rewards	<ul style="list-style-type: none"> • Risk. • Purpose. • Artificial conflict / Contest / Effort. • Quantifiable outcome / goals. • Value attached to the outcome.
	Mechanics	<ul style="list-style-type: none"> • System / Framework - The system/framework facilitates the mechanics. • Defined by rules.

Community and interaction	Interaction Player collaboration	<ul style="list-style-type: none"> • Players engage / interact. • Players / Participants. • Location of the game – this is where the game is played.
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Table 9: Game design theory - components/categories.

In Table 9 games are divided into game actions and interactions. The game actions are the game mechanics and the activities that facilitate the goals and rewards of the game. Each of these components contains elements informed by the literature. The interactions of games are in this case primarily the players' engagement and participation in the game.

The literature for ARGs produced the following table:

		ARGs	
Narrative component	Game narrative/ Story world	<ul style="list-style-type: none"> • Transmedia storytelling/ fiction • Narrative/ Interactive narrative/ Content creation/ Distributed narrative. 	
Game Action	Mechanics	<ul style="list-style-type: none"> • Solve puzzles/ challenges/ scavenger hunt like. • No explicit rules – There still exist implied rules that guide the functionality of the mechanics of puzzle solving in ARGs. 	Alternate reality – because of these characteristics the game creates an alternate reality.
		<ul style="list-style-type: none"> • Cross media/ Multiple media/ Multiple communication technology – The media facilitates the mechanics of the game. • Virtual Immersion/ Integrated reality/ Alternate reality. • Real time. 	
Community and interaction		<ul style="list-style-type: none"> • Immersive game – the players interact with the game and one another in a way that promotes immersion. • Unclear and unlimited game space. 	
	Interaction	<ul style="list-style-type: none"> • Interaction between producer/ game and player/ puppet master. 	
	Player collaboration	<ul style="list-style-type: none"> • Collaborative. • Collective play. • Collective Intelligence/ Collective problem solving/ Collective detective. 	

Table 10: ARG theory - components/categories.

Table 10 shows a different focus in the identified components and categories than within games. The focus in the literature for ARGs was on community, narrative and alternate reality. The game action section of ARGs focused on the generalisation of gameplay in ARGs. The combination of the two tables (Table 5, Chapter 2 -2.6. The nature of ARGs) showed that there are specific important categories to focus on when analysing ARGs. The game design section in the literature provided understanding into the game element of ARGs, specifically on how the game actions occur and how they function within a game. The ARG section of the literature, combined with sections from the game design literature, highlighted the focus of ARGs on narrative and player community.

The table from Chapter 2 -2.6. The nature of ARGs (Table 5) is repeated here for convenience.



		Games	ARGs
Narrative component	Game narrative/ Story world	<ul style="list-style-type: none"> Artificial conflict - The narrative assist in the creation of conflict. Computer generated world. 	<ul style="list-style-type: none"> Transmedia storytelling/ fiction Narrative/ Interactive narrative/ Content creation/ Distributed narrative.
Game Action	Obstacles, goals and rewards	<ul style="list-style-type: none"> Risk. Purpose. Artificial conflict / Contest / Effort. Quantifiable outcome / goals. Value attached to the outcome. 	
	Mechanics	<ul style="list-style-type: none"> System / Framework - The system/framework facilitates the mechanics. Defined by rules. 	<ul style="list-style-type: none"> Solve puzzles/ challenges/ scavenger hunt like. No explicit rules – There still exist implied rules that guide the functionality of the mechanics of puzzle solving in ARGs.
		<ul style="list-style-type: none"> Cross media/ Multiple media/ Multiple communication technology – The media facilitates the mechanics of the game. Virtual Immersion/ Integrated reality/ Alternate reality. Real time. 	Alternate reality – because of these characteristics the game creates an alternate reality.
Community and interaction		<ul style="list-style-type: none"> Immersive game – the players interact with the game and one another in a way that promotes immersion. Unclear and unlimited game space. 	
	Interaction	<ul style="list-style-type: none"> Players engage / interact. Players / Participants. Location of the game – this is where the game is played. 	<ul style="list-style-type: none"> Interaction between producer/ game and player/ puppet master.
	Player collaboration	<ul style="list-style-type: none"> Even though not explicitly mentioned as a characteristic of games, player collaboration may occur. 	<ul style="list-style-type: none"> Collaborative. Collective play. Collective intelligence/ Collective problem solving/ Collective detective.

Table 11: A repetition of Table 5.

This combined analysis shows that the various phenomena within an ARG can be broadly categorised as game actions, community or narrative. This answers the question, what components/categories were identified.

The analysis was informed by both the raw data and the literature. The literature provided the researcher with context and better understanding of the existing theory. During the analysis of the game summaries, the phenomena were categorised based on their similarities and differences and criteria were developed to describe each category. The analysis of the game summaries confirmed the categories identified from the literature. Further subcategories were identified during the analysis of the game summaries. The criteria for the categories and subcategories will be discussed in a later section. The subcategories were placed under the primary categories where the primary categories were informed by the salient issues in the existing literature. The subcategories will be discussed in a later section.

A more detailed discussion on the primary components of ARGs according to this study can be found in Chapter 2, specifically the section called “The nature of ARGs”.

6.4.2 Developing the categories

At this point in the study a general understanding of the basis by which the previously played ARGs would be analysed was established. While compiling the game summaries of each ARG that was to be studied, the various phenomena had to be placed into subcategories. Each subcategory is placed within a category. During the analysis of the ARGs, the subcategories were established using constant comparative analysis (discussed in detail in Chapter 3).

Figure 90 provides an outline of how the ARGs’ phenomena were categorised.

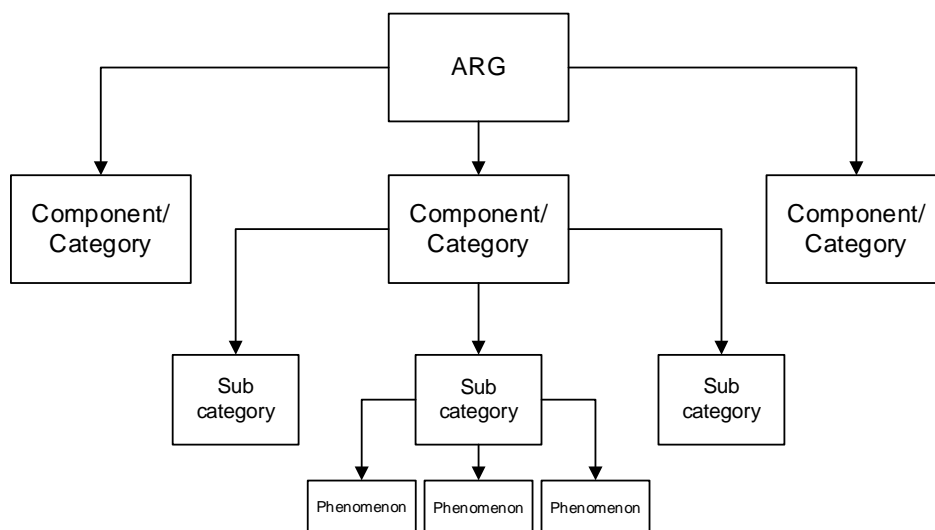


Figure 90: Categorising the phenomena in each ARG.

The following section describes the categories, the subcategories and the criteria to be met for a phenomenon to be placed in each category or subcategory.

6.4.2.1 “How are the components/categories of an ARG sub categorized?”

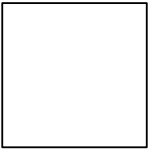

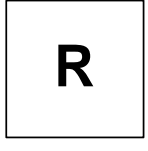

During the compilation of the game summaries in Chapter 4, analysis was done. The analysis produced confirmation for the categories, as identified in the literature review, as well as subcategories. Together with the categories and subcategories, the relationships between the

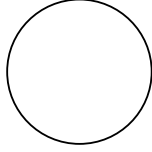
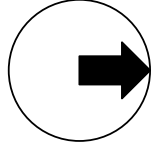
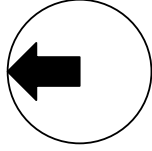
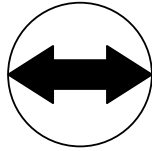
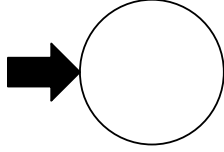
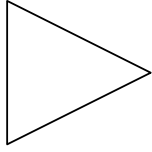
categories and subcategories were also identified. The different phenomena in the game summaries were categorised using these categories and subcategories.

Table 12 provides a summary of the categories, their subcategories as well as the symbol that represents the category. A summary of the criteria required for a phenomenon to be categorised in the specific category or subcategory is also provided.

Table 12 provides the answer to the question “How are the components/categories of an ARG sub categorised?”. The table contains the subcategories for each category as well as the criteria for each category and subcategory.

In-depth information can be found in the section in Chapter 3 – 3.2.2.3 The categories and their respective subcategories.

Category	Symbol	Criteria
Narrative	 Narrative	The narrative category encapsulates everything narrative from the game. The subcategories compiled during the analysis identified unique functionality of the individual narrative pieces.
Subcategory	Symbol	Criteria
Narrative hook	 Narrative hook	The narrative hook provided a piece of narrative that then linked to another component. This can be a narrative piece, a lead-in mechanism or a puzzle.
Narrative reward	 Narrative reward	The narrative reward is a piece of narrative given to the players as a reward for game participation. The narrative reward can contain narrative hooks.
Narrative piece	 Narrative piece	The narrative pieces are provided to the players throughout the game. This can be in the form of game updates on a regular schedule or narrative provided to the players to further the game context. Narrative pieces can contain narrative hooks.

Category	Symbol	Criteria
Community	 Community	The community category encapsulates everything community related in the game. The subcategories describe unique community interactions and are all phenomena that added to the collaborative nature of the community. The community category also displays the manifestation of the collective intelligence.
Subcategory	Symbol	Criteria
System with player interaction	 System with player	The system with player interaction describes the system providing the players with specific information. This communication can spark other interactions within the community or can appear as rewards for the players.
Player with system interaction	 Player with system	The player with system interaction describes the players communicating with the system. The system can take the shape of game characters. Primarily it is the players providing the game with input.
Player with player interaction	 Player with player	The player with player interaction describes the players' communication with one another on either player only channels or game created channels. This category is the manifestation of the dissemination of information required for the community in an ARG to function.
External interactions	 External interaction	The external interaction category describes phenomena that were not produced for game purposes. These phenomena are the external viewer commenting on the internal events of the game, for example media reaction to the game, players talking to non-players about the game etc.
Category	Symbol	Criteria
Game action	 Game action	The game action category encapsulates everything mechanic and puzzle related in the game. The game actions are the traditional "game play" components that can be found in all games, both digital and non-digital.

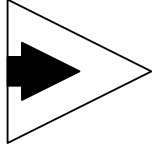
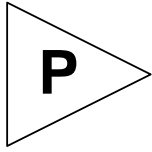
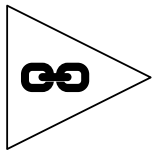

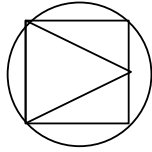
Subcategory	Symbol	Criteria
Lead-in mechanism	 Lead in mechanism	<p>The lead-in mechanism category describes phenomena that are not narrative related. These phenomena usually leads directly to game puzzles. The lead-in mechanism describes all things within the game that lead to puzzles that are not narrative or community related.</p>
Puzzle	 Puzzle	<p>The puzzle category describes all the phenomena that contain game actions. From treasure hunting to solving cryptography puzzles, these phenomena are called puzzles.</p>
Link	 Link	<p>The link category was placed under game actions but describes any phenomenon that provides a direct reference to any other phenomenon. As described in Chapter 3, the link element was only found in Year Zero.</p> <p>The function of the link element was implicitly present in the other two games due to formulations in the narrative context. Year Zero was the only game that provided an explicit phenomenon for it. The link element can either be explicit or implicit. In the case of “Year Zero” a link element occurred in the shape of a number linking the various phenomena and serving as an in game referencing system. In other games the linking between phenomena occurs implicitly in the form of context and thematic linking.</p>
Miscellaneous	Symbol	Criteria
Hook	 Hook	<p>The hook category describes a phenomenon that provides non-players with clues that draw them into the game and turns them into players. Any phenomenon can be categorised as a hook as long as its function adheres to the criteria.</p>
Complete element	 Complete element	<p>The complete element describes a combination of the narrative hook, lead-in mechanism, puzzle and narrative reward. The existence of this element was due to the structure of the game summaries. A single sentence recounted by the guide author can contain all the above-mentioned phenomena. Instead of breaking up the sentence into multiple sentences so the categorisation can be applied, the complete element was used to describe the combined phenomena.</p>

Table 12: Summary of the categorisations.

6.4.3 Three constructs for three games

This section attempts to answer the following question:

What structures are formed by linking according to the relationships between the components/categories and subcategories?

Applying the above analysis provided detailed constructs for the phenomena encountered in the game summaries. The detailed analysis can be found in Chapter 5. Each game's analysis resulted in a construct that represents the game based on the above discussed categories. The abstraction attempted to describe the game in terms of its phenomena and the relationship between these phenomena.

The constructs or diagrams were discussed after each game's analysis and can be reviewed together with the discussion of the constructs in Chapter 5. Figure 91, Figure 92 and Figure 93 are the constructs for each game.

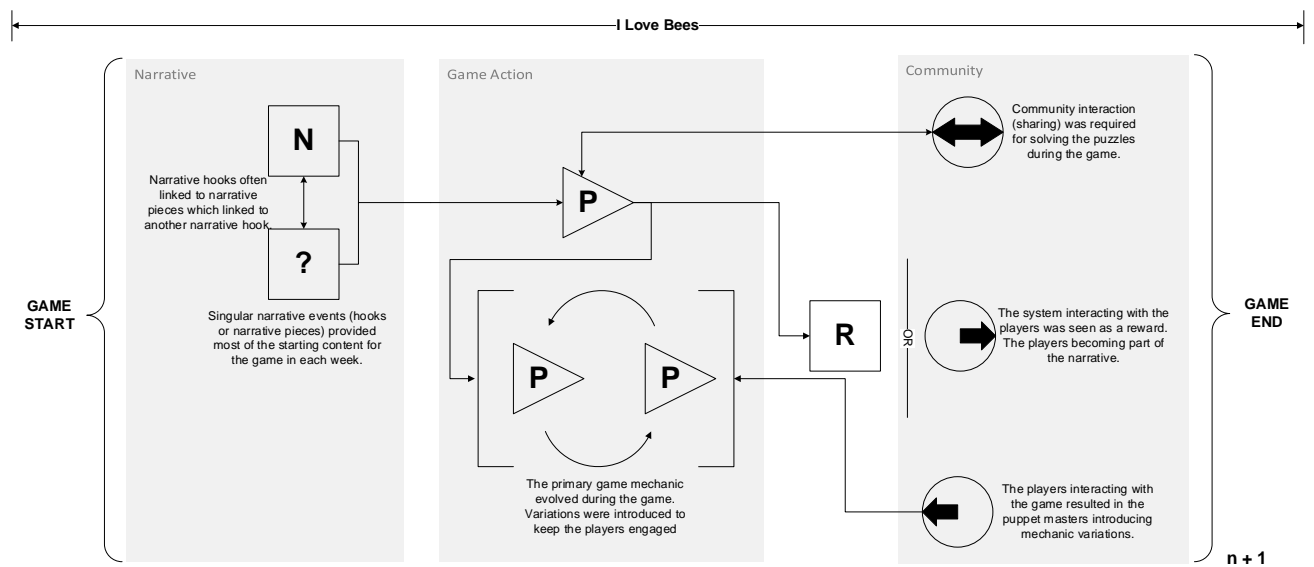


Figure 91: Diagram for "I Love Bees".

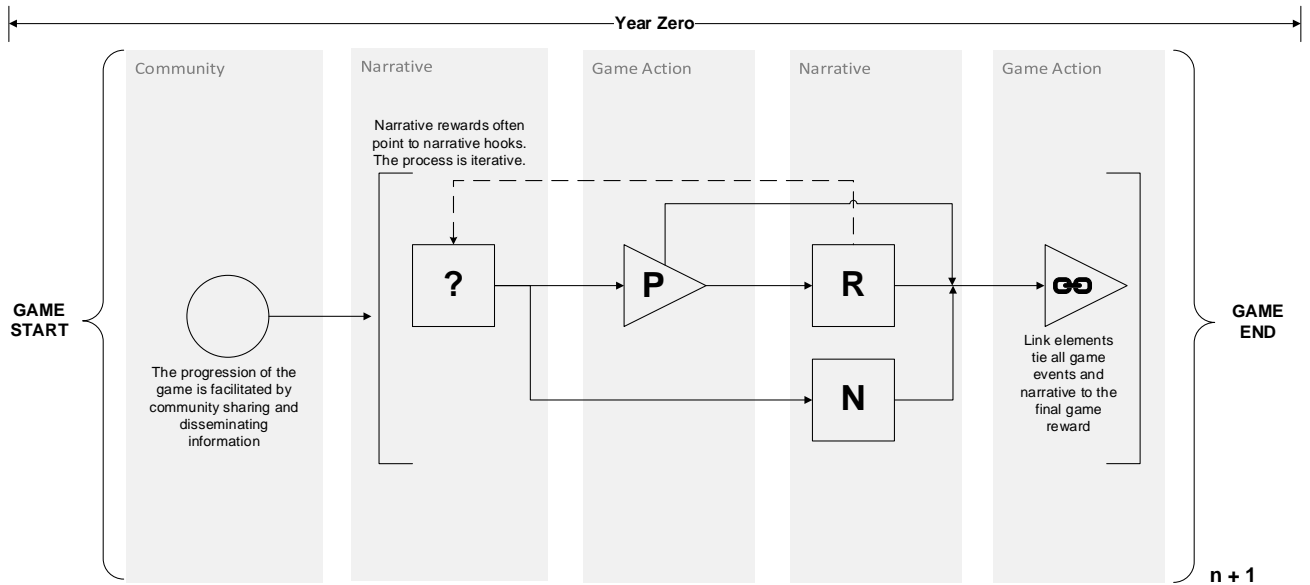


Figure 92: Diagram for "Year Zero".

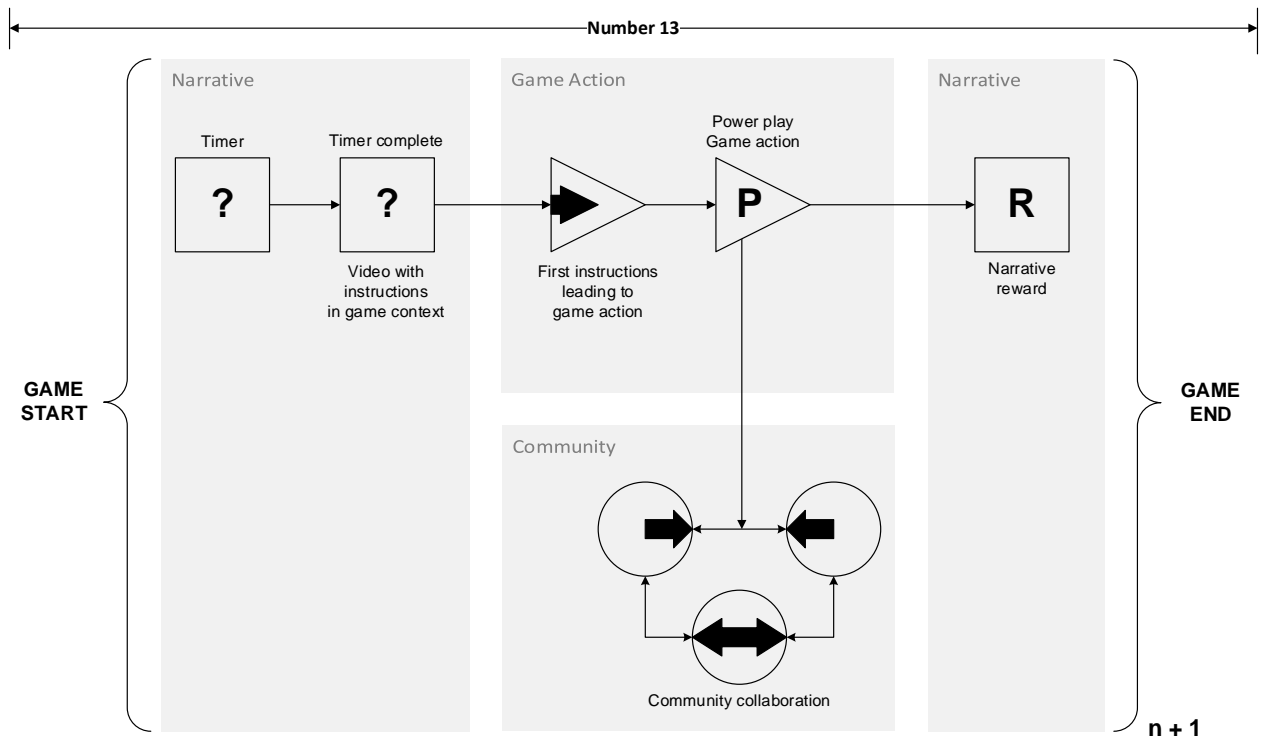


Figure 93: Diagram for "Number 13".

Each of the above diagrams shows the relationship between the categories and subcategories based on the specific games. The diagrams show an abstract representation of the game and provide an understanding, per game, of how the categories and subcategories interact with one another as well as their relationship. These diagrams show abstract structures repeated in each game for the duration of the game. It is important to note that each of the diagrams can be cycled through multiple times and also occurs at least once per game (n+1).

6.5 Combined analysis – the conceptual framework

This section will attempt to answer the following question:

How can these structures be used to develop a conceptual framework?

At this stage in the study, detailed analysis was done on three ARGs. Each ARG provided a different construct that was an abstraction of each game. The abstractions provided an understanding of each game's unique phenomena and the relationship between these phenomena. Combining the three constructs from the analysed ARGs was done by investigating similarities as well as differences between the way the categories and subcategories interact with one another.

The conceptual framework in Figure 94 was developed by generalizing the diagrams in 6.4.3 for each game. Combining the three diagrams produced the conceptual framework in Figure 94.

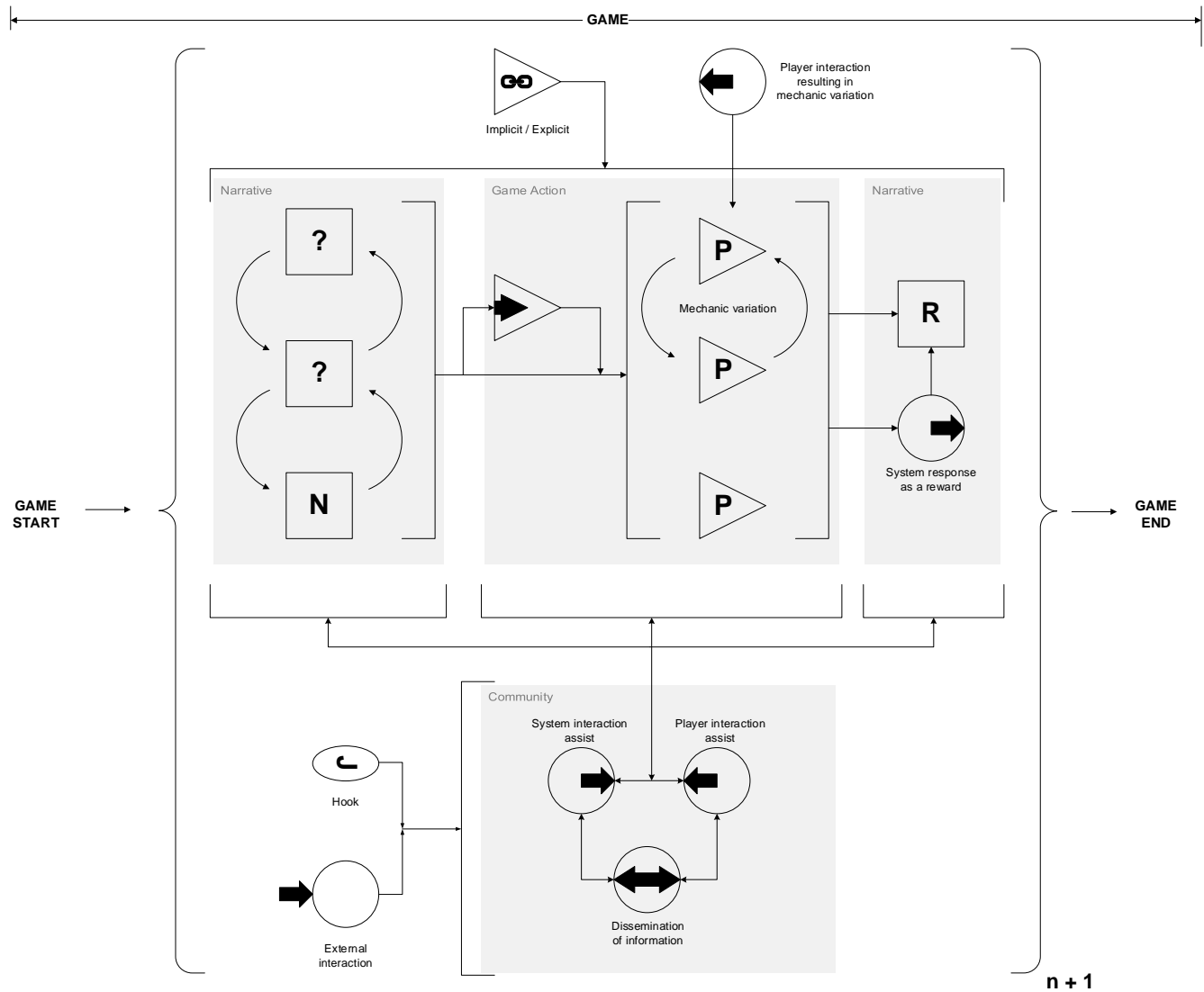


Figure 94: The conceptual framework for developing and analysing ARGs.

The primary driving force that moves an ARG forward is the players participating in the game. By participating in the game, the players are playing it. This is not a unique feature of ARGs and is something that is found within all games. Without players a game cannot exist. The forward force of the player participation in ARGs is described in the “Community” categorisation in Figure 94. The “system interaction assist”, “player interaction assist” and the “dissemination of information” are all phenomena that can be found in the three ARGs used in this study. The community collaboration and interaction has the largest influence on “game action” category within the framework. The community is the driving force; the players discover the narrative hooks and pieces, the community analyses it and discovers the puzzles but without the players solving the puzzles, the game will not be able to progress. The community category requires iterative interaction between the players and the system. The passing of information between the players and between the players and the system is the forward motion of the ARG in terms of interaction and narrative.

The narrative of the ARG is the “fuel” for the forward motion. Without the narrative, the players will not be able to share the information with one another, there will be no interest in solving puzzles because there will be no reward and there will be no context for the players to use for interpretation of game actions and narrative. The first narrative category in Figure 94 provides a representation of how the narrative is provided to the player. Narrative is provided in the form of narrative pieces or narrative hooks. The narrative pieces can contain narrative hooks. Narrative hooks can provide players with more narrative hooks and these hooks can point the game action component of the ARG.

Individual phenomena are categorised and sub categorised as the game actions within the ARG. The game actions can be preceded by a very specific phenomenon that directly points to a game action. This specific phenomenon is categorised as a lead-in mechanism. The narrative hook can also directly result in the players discovering game actions to complete. Completing the game actions requires the full community interaction. Even if a single player can solve the puzzle, that player is still required to share the solution with the rest of the players as well as what they received as the reward. By doing this, players add to the game narrative, establish game context and provide opportunity for game progression. Within the game action category, the game mechanics can also experience variation. The game mechanic variation is sparked by the players becoming used to the current mechanic. A level of boredom develops, and even though the ARG is primarily about the narrative, the game must remain engaging. Because of this, the game can introduce game mechanic variations. This can lead to a puzzle leading to a similar puzzle but with different mechanics (mechanic variation).

By completing the game actions, the players once again receive narrative, this time in the form of narrative reward. The narrative reward provides the players with narrative specific to the game’s narrative and expands the context of the game. The players can also receive a system response that can form part of the narrative reward. This system response is not necessarily narrative. The system response makes the players a part of the complete game experience. For example, besides giving the players a narrative reward, the system mentions specific players by name. Even though the players do not become an intricate part of the narrative, the mentioning of the players by name provides the players with a level of ownership. The players experience that they had an influence on the events of the game because the game directly acknowledges them.

The discussed flow of narrative to game action back to narrative, facilitated and driven by the player community is described in the conceptual framework. The detailed components within

the framework provide proposed examples of how this flow can be achieved within an ARG. As with the summary diagrams for each game, the $n+1$ in the diagrams implies that the diagram can be cycled through multiple times but must occur at least once in a game.

6.6 Summary

The previous sections answered the sub-questions required to answer the main research question:

How can a conceptual framework for ARGs, based on game design theory, be developed?

By investigating literature on both game studies and ARGs, three existing ARGs were analysed. The analysis provided categories and relationships between these categories which in turn enabled the researcher to develop a conceptual framework that can be used to analyse or develop ARGs.

In summary:

- Literature studies from both game design theory and ARGs were used to develop an understanding of the characteristics and elements of games and more specifically ARGs.
- From these characteristics three categories were identified: game actions, narrative and community.
- The three categories were identified in the literature and were confirmed in the analyses of the three ARG case studies.
- Subcategories and their relationships were identified through analysis of the three ARGs. Criteria were also developed that enabled phenomena identified in the ARG to be categorised or sub categorised.
- The analysis of the three games provided an abstract diagram of each game that generalised the games. These structures visually displayed the categories, subcategories and the relationships between them.
- By combining the three diagrams, a conceptual framework was developed.

The conceptual framework was developed based on game design theory and by analysing the case studies of three ARGs based on categories and subcategories identified through the analysis of the three games and the existing literature.

6.7 Contribution of this study

By consulting existing game design theory and developing an understanding of what games are, a perspective on the existing work on ARGs was provided. Understanding ARGs not just on a cultural level or as a player phenomenon but as games could aid the development of ARGs or ARG-like games.

ARGs are complex games because of their reliance on players and player community. Developing an ARG is a complex task and will continue to be seen as experimental. Understanding ARGs as games and then understanding the parts of ARGs that go beyond games can help inform the studying of past ARGs as well as the development of new ARGs. This study will help researchers understand ARGs from a game design perspective as well as provide them with the correct context for understanding the phenomenon of ARGs. The proposed framework, with the context provided by the previous parts of the study, will help to

simplify the complexity of ARGs. Looking at the framework will provide researchers an “at a glance” understanding of the components of an ARG.

The proposed conceptual framework can then aid researchers and developers in designing and studying ARGs. Using the framework will provide researchers a definite starting point in designing and studying ARGs. It is also hoped that the conceptual framework will not only be used in ARGs but will be used in developing a new type of game that can use the strengths of ARGs while avoiding the limitations and challenges of traditional ARGs.

6.8 Future research

6.8.1 Expanding and validating the conceptual framework

The proposed conceptual framework can be used to analyse existing ARGs to test its validity. By following the same analysis method while still allowing the expansion and addition of categories and their relationships will allow the extension of the conceptual framework.

Employing the same methodology as this study to further expand on the conceptual framework will also enable the framework to become more robust. The expansion of the framework will allow it to more effectively generalise all ARGs. By following the same methodology the validation aspect will produce a framework based on different games and then compare the new framework with the existing framework.

Through the comparison, the existing framework can be expanded to include more types of ARGs. The current study only used production ARGs and a single grass root ARG. By analysing more types of ARGs, the framework can effectively be expanded to encapsulate all ARGs.

6.8.2 Developing ARG-like games

The framework can also be used to inform the development of new ARGs or new types of games. By applying the framework to games that are not ARGs may result in the new game gaining the advantages of unique components of ARGs while not suffering from the limitations of ARGs.

The investigation into the game design theory and how it relates to the existing ARG theory highlighted how ARGs differentiate from normal games. The study shows the weaknesses and limitations of ARGs but also highlights the unique and effective approaches ARGs take to things like narrative and collaborative communities. By employing these strengths in a different type of game and then again analysing the new game based on the framework will help to expand the existing theory of ARGs and even game design theory.

Investigating different ways players interact with games and with one another when providing a game-like context will help further understanding of how people play. With the transmedia approach of ARGs this can help expand the understanding of play as fast as the new technologies grow.

6.8.3 Gamifying by borrowing ARG elements as well as game elements

The conceptual framework can also be tested in creating communities that can be capable of applying a complex set of skill to very specific problems. The conceptual framework can help identifying the game elements unique to ARGs. These identified ARG elements can then be applied in a gamification context.

By harnessing the collective intelligence of a community, complex problems can be solved. The usage of the framework in developing a community instead of an ARG can produce an information-driven group of people that can consume large and complex sets of information and produce their own sets of information. The goal of gamification is to align the goals of the user of the system to that of the system itself. If both parties are working towards the same goal, motivation becomes something that is intrinsic to the system rather than extrinsic. This will result in the users using the system more often and to a larger extent.

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8 Appendices

8.1 Case Databases

8.1.1 Appendix A – Production ARG – “I Love Bees”

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