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# Can An ARG Run Automatically?

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**Figure 1.** *The Sky Remains* online Alternative Reality Game (ARG) login page developed as a research probe to explore if ARGs can be repeatable.

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**Abstract**

Alternative Reality Games (ARGs) provide an interesting platform to explore the nature of game play as they combine fictional and real world elements to create a unique gaming experience. A typical ARG plays over a set time span and players collaborate via an ongoing narrative orchestrated by 'puppet masters'. This paper presents a six week study based around an ARG which was designed to be repeatable, allowing players to enter the game at anytime. Through the use of temporal trajectories we analyse player's interactions and unveil a number of problems that hindered game play. The players lifestyle, pace and gameplay traits all impacted on the game and raises the question of whether a repeatable ARG can really work. We close with some design pointers that might make it feasible.

**Keywords**

Augmented Reality, Entertainment, Ethnography

**ACM Classification Keywords**

H.5 Information Interfaces and Presentation (HCI)

**Introduction**

Much of the focus on pervasive games has been on the concept and technologies [8] the applications [9] and the design and user experience [1]. There has been little research into the nature of alternative reality games (ARGs) in relation to how they are played and who plays them. ARGs are a form of internet-based pervasive game in which participants are immersed in a fictional world and engaged in collective problem solving. ARGs take elements of real life and entwine

them into a narrative using the internet and other cheap modern communication methods creating a whole new genre of interactive games [10]. They are usually run by 'puppet masters' who release puzzles and elements of the story in response to real time game play and interaction with the players. Some ARGs provide opportunities to engage in live action events or missions which take place in the real world. McGonigal [11, 12] has provided valuable insights into the ARG arena which reflect on live "in game" events, "power plays" and the puppet masters who design and run the game. The need for constant orchestration has been identified as a limitation in many pervasive games as it constrains them to being one-off gaming events.

A typical ARG requires a huge amount of resources to initiate the game, in the development of websites, forums, images, video clips, puzzle formation and story creation. Not only does the game require intense orchestration from the puppet masters, but many of the elaborate resources created for an ARG are used just once and then they are abandoned, making ARGs hugely expensive to inaugurate and sustain over a long period of time. This paper explores the potentials and pitfalls of creating an ARG that could run automatically.

An ARG was created called *The Sky Remains* [7] which was designed by Licorice Films in collaboration with researchers from HP Labs, as illustrated in Figure 1. It was produced primarily as a research probe to explore the nature of ARG play. The game differs from 'traditional' real time ARGs with the intention to be a permanent resource which was repeatable, thus allowing players to access the game at any time and fit game play around their everyday life. Game players sign up to enter the fictional world of *The Sky Remains*

*6<sup>th</sup> Dimension Detective Agency* where they become detectives and begin solving a series of online puzzles related to a mysterious plot. Each time players solve a puzzle the next stage is revealed as a video story. The continuous narrative does not rely on intervention from the puppet masters and the games interface provides the facility for online collaboration between players. As players progress through the puzzle trail their credentials as a detective increase until they reach silver and gold status. The game then continues with a series of location based tasks requiring players to co-ordinate activities in the real world. However the focus of this paper examines only the online part of *The Sky Remains* game play.

## **The Study**

### *Participants*

Two sets of participants were recruited for this study; the *ARG Random Group* who had no previous ARG experience and the *ARG Savvy Group* who had previously participated in ARGs prior to this study. The *Random Group* consisted of ten participants, three female and seven male aged between 15 -54 years of age. The *Savvy Group* consisted of seven participants, three female and four male aged between 26-45 years of age. All participants were based in the UK and were given £50 vouchers for partaking in the study.

### *Method*

The primary research methods used was a diary study and in-depth interviews. Participants were given a small paper diary and asked to keep a record of all their game related activities for a period of six weeks. A briefing interview or email was given at the start of the study and upon completion an in-depth interview of between sixty to ninety minutes was conducted with



each participant. The interview used semi-structured questions designed to elicit their experiences during game play to find out what they enjoyed or not enjoyed, how they managed their work life balance and their social and family relationships.

### Main Findings

The *ARG Savvy group* had the most successful experience with the online *Sky Remains* game, while many of the *ARG Random group* found the online game too difficult or intimidating to play. To understand this mixed reaction we shall now compare the different gaming experiences of each participant group.

#### The Savvy Group

Participants in the *Savvy Group* had met previously on ARG forums, such as 'unfiction' [14] which is one of the most popular ARG sites providing chat rooms where players can discuss aspects of the game. Collaboration and sense of achievement in solving complex puzzles is one of the main motivators in ARG play, as one Savvy player describes, "there is an element of competition ...its kudos I suppose. You want to be the one who solves the puzzle first and then bask in the glory". The game relies on players collaborating together on the forum in order to solve the puzzles, as seen in Figure 2. The sense of community is another important factor within the *Savvy Group*, where each player recognises they have different skills they can contribute, as one participant described it like being "a little band of gatherers". The opportunity for players to contribute their different skills within a collective problem solving community is important to the success of an ARG.

The *Savvy* players were in the forefront of the game and solved the entire online puzzle trail in the *Sky*

*Remains* in just four days. This intense game play period was exciting for these initial players who benefited from the close collaboration and being the ones to solve the puzzles first. However, the experience would never be as intense for players who joined after this period, like the participants in the *Random Group*.

#### Random Group

All the participants from the *Random Group* signed up later than the *Savvy Group* and did not know each other so their game play started at different times. The puzzle difficulty proved very challenging and the "stark" look of *The Sky Remains* forum left participants feeling "isolated" as one participant explains, "every time I logged on there it seemed to be only me logged on...no-one seemed to be using it". This feeling of isolation led to despondency causing some participants to disengage from the game. Those that persevered went onto the ARG forum 'unfiction' where they soon found a history trail of posts from the *Savvy Group* players who had all started playing the game earlier. The *Random Group* then had access to the answers to all the puzzles if they wished, although they had been 'spoiled' (covered up) they could choose to view them or use them as clues in order for them to solve the puzzles themselves.

#### Temporal Trajectories

A recent study of a text messaging game played on mobiles called *The Day of the Figurines* [6] provided flexibility for players to "dip in and out" of the game as the 24 hour narrative was slowed down and played "episodically" within 24 days. To analyse the player's patterns of interaction the above study used 'Temporal Trajectories' [2] which maps the fictional 'story time' of the game against the real 'clock time' of the players, which was adopted within our study

**Player A:** "Has anyone figured out the answer for the mobile phone thingy yet?"

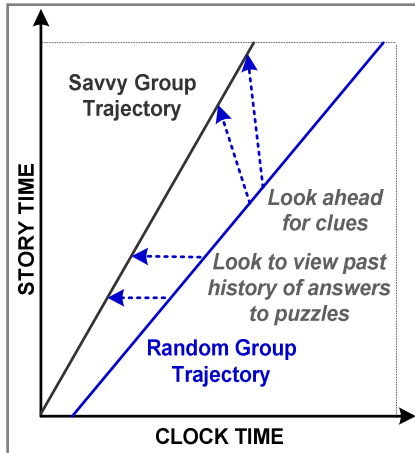
**Player B:** "I have the mobile scanner open now but it's not doing anything...am I just looking at the wrong things again?"

**Player C:** "The only things I've found so far are the page of notes that are linked to the video... I can't figure out if the entire scanner page is a red herring and we're supposed to find something on the change password page...or what the deal is..."

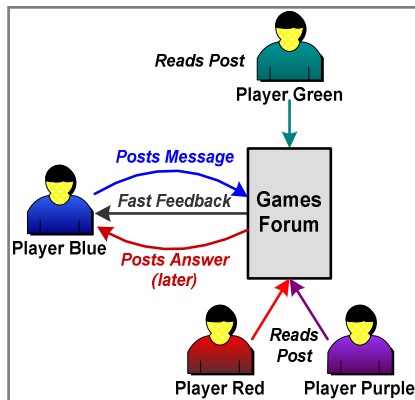
**Player A:** "I tried putting "your log in password" as the answer... it didn't work"

**Player D:** "Look in the black box below the scanner" (spoiled clue)

**Figure 2.** The Mobile Phone Scanner Puzzle (shown above) and a snippet of conversation taken from the forum illustration how some of the *Savvy Group* of players collaborated in order to solve this puzzle.



**Figure 3.** The *Random Group* trajectory was behind the *Savvy Group* Trajectory. So the *Random Group* could view all the past answers to the puzzles posted from the *Savvy Group* and could look ahead to find clues.



**Figure 4.** Players vary in pace; as the *Player Blue* posts a message they expect fast feedback yet receives an answer from *Player Red* much later, after *Player Green* & *Purple* have read the post.

The *Savvy group* was motivated by being the first to solve the puzzles through effective collaboration yet the *Random group* was de-motivated when they found that all the puzzles had been solved and they could access all the answers. The respective temporal trajectories for the two groups are shown in Figure 3. Each player followed their own unique 'canonical trajectory' which captures the 'temporal nature' of their game play. This varied depending on individual pace and due to *The Sky Remains* rolling narrative players could start the game at any time. Therefore players were not in the same 'clock' or 'story time' which hindered collaboration as they were unable to solve the puzzles alone and so became stuck within the game remaining stationary.

#### Managing Players Pace

Effective collaboration relies on players participating equally, yet players vary in pace and can often be mismatched when one player may be more eager to solve a puzzle than another [3]. Players may post the answer too soon, or not respond to a post quick enough often leading to despondency, as shown in Figure 4. *The Sky Remain* did not support a variety of player pace which is a necessary design consideration.

As the puzzle answers were "all there" participants in the *Random Group* did not interact on any of the forums as they did not want to look "stupid" posting messages on past solved puzzles. Therefore they did not get the opportunity to collaborate with each other, share skills and ideas, so a sense of community did not develop within this group.

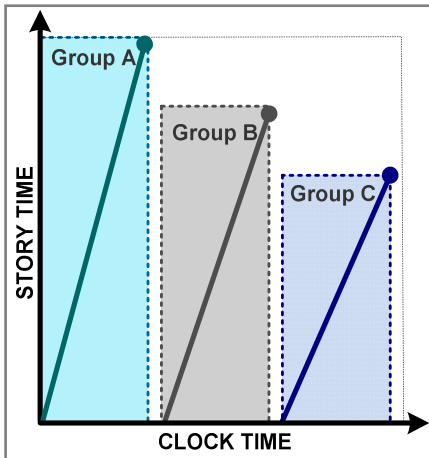
#### Design Suggestions

A technique that might help is to synchronise set times when new players join the game rather than let it run

continuously, as shown in Figure 5. This would increase the chances that groups of players start at the same stage and enhance collaboration to occur only within that stream. The idea of synchronized streaming could also assist in ARG groups becoming too large. Previous research suggests that once communities expand over a certain size they can lose their cohesiveness and veer to entropy [12]. An *ARG Savvy* player suggested that if games become too popular and large "it makes it really hard to get involved" as it is difficult to follow threads of conversation on forums and identify with other players. Adopting synchronized streaming players can be restricted so that they only see conversations between other players in their stream creating a sense of intimacy as the stream size would be limited, thus enhancing connectivity and cohesiveness. However, for an effective streaming system to work it relies on groups of players to progress at an equal pace.

#### Managing Relationships and Time

All participants were aware of how gaming affects their relationship with their families although the *Savvy group* appeared more tenacious as they routinely checked the forums and website for new puzzles in between doing other things. Many were "less willing to invest the time" playing games and limited their game play to allocated time slots during the week, often referring to this as "my time". There was also a constant conflict of attention from other forms of entertainment like watching TV, films, books and social events. As one participant explains, "I go through phases of watching films...then I'll swing back to games". The suggestion that game play occurs in "phases" or is "a mood thing" was also shared by others, as one participant outlines, "my enthusiasm for gaming tends to come and go in waves". Having set



**Figure 5.** *Group A* begins playing the game and interacts, then a *Group B* player wants to play but waits until *Group B* synchronises to start. Each group collaborates independently and only messages within the group are visible so they cannot look ahead or back to view past posts.

'clock times' when a game stream starts will help players plan their gaming time budget.

#### *Managing Social Interaction*

Previous research into the social side of gaming has been conducted mainly in the context of Massively Multiplayer Online Games (MMOG) in particular World of Warcraft (WoW) created by Blizzard Entertainment [15]. Released in November 2004, WoW experienced a rapid growth reaching 11.5 million subscribers in just four years. This popular multiplayer game connects thousands of online players within a collaborative fantasy game world. Research suggest that many players enjoy solo play and often do not belong to groups or guilds, yet still enjoy the 'social factor' of playing with others where lightweight collaborations with strangers can be both enjoyable and enlightening often leading to deeper friendships [4, 13]. Game streams would allow players in a stream to follow an individual path but have the ability for lightweight collaborations with other players in that stream.

Social interaction was considered an important aspect of gaming with all participants; however interaction within a forum varied between groups. The *Savvy group* all contributed extensively to forums whereas the *Random group* tended to lurk rather than contribute, as one participants explained, "I'm more of a reader ...or perusal of forums, just to find out the answer I am looking for". This view was shared by the majority of this group who considered themselves as "not forum people". These players enjoy being 'alone together' where they play in solo yet are still in the presence of others. In contrast the *Savvy group* extensively posted on the forums especially during the initial phase of puzzle solving. These players enjoyed having an

audience and being a spectacle, which the gaming forum provides. It is also important for these players that their rewards are publically shared within a community giving them a sense of achievement [5].

To enhance collaboration the game system needs to provide feedback similar to the intervention of the puppet masters [11]. Generating a sense of social presence provides players with the feeling they are not alone where forum activity is continuous. To encourage forum interaction players need to feel they are part of an active environment. It needs to support strangers in bridging "weak ties" to create initial collaborations or "knots" so groups can accomplish the puzzle solving tasks, along with reinforcing existing friends or "strong ties" within an ongoing community [13]. An ARG system needs to create opportunities for "social action" by doing things together as a shared activity with those where a relationship has been developed. Providing specific game spaces for each group and restricting visibility to conversations within that individual group space would significantly enhance collaboration. Puzzle difficulty should reflect the "Virtual Skinner Box", similar to WoW whereby slowly increasing the reward and difficulty levels to enhance player motivation and commitment [5]. Finally, in looking to social networking sites where successful techniques like updating recent gaming activities, reporting on status and providing a more personalised interface could significantly improve the gaming experience.

#### **Future Work**

This paper concentrates primarily on the ARG online puzzle based game play and the initial experiences of those participants who played it. Further options were provided within the game to extend gameplay to the

outside in an attempt to move play away from indoors and to introduce real world experiences. These location based activities are a continued area of future research and is not the main focus for this paper.

### Conclusion

This paper presents a study of a work in progress into the potential of creating a repeatable ARG. There is huge potential to develop an automatically run ARG structure as it offers great creative and commercial opportunities. Designing an ARG that has an increased lifespan beyond just a one-off event will efficiently reuse the considerable resources created for such a game. Most successful ARGs require significant input from puppet masters who email players, write on forums and change story lines in response to player interactions. The results from this study suggest that for a continuous ARG to be successful it needs to be commercially sustainable by managing continuous numbers of new players through synchronized streaming, provide a personalized collaborative environment and carefully monitor player's progress throughout. To implement such requirements at present would be difficult to sustain for now, yet maybe certainly possible in the future.

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