Peer Puppeteers:

Alternate Reality Gaming in Primary School Settings

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ABSTRACT
Whilst there has been considerable research into the potential uses of digital games in the classroom, there has been less investigation into the educational value of Alternate Reality Games (ARGs). Unlike console or computer games, in ARGs the game-world is constructed through a combination of on- and off-screen media, and is created and shaped through dynamic dialogue between the designers and players. To create and play an ARG, children are not required to develop programming skills or negotiate gaming software. Instead the players and designers of ARGs create the game elements through the creative and inventive use of ubiquitous communication technologies and artifacts. In this paper I will be reporting on a cross-curricular multi-media literacy project undertaken in a large South London Primary School over two years, which represents one element of my ongoing research into the potential of Alternate Reality Gaming in Primary Education. In this, the children collaborated with the teacher to design and play an ARG with and for their peers. This research demonstrates that ARGs represent an innovative means for children to explore and develop their understanding and experiences of learning and literacy practices across media. In this project, the students made good use of their existing knowledge of games and the affordances of various media and narrative conventions. Through the active production of ARGs, they explored the relationships between these forms, in new ways.

Author Keywords
game-design, alternate reality games (ARG), primary school education

THE RESEARCH PROJECT
The alternate reality game (ARG) discussed in this paper was created by 30 10-11 year olds in my Year 6 (Y6) class and was played by a Year 5 (Y5) class of 9-10 year olds in the same school. The design and play of this ARG was a dialogic process in which the Y6 game-makers and story-tellers, developed and applied their understanding of narrative and games in order to create an immersive and engaging adventure for their peers. The Y6 children used the novel *The Mighty Fizz Chilla* by Philip Ridley [9] as the basis for their game but during the design process they decided to make significant changes to the original plot, although the quest motif and the characterization were maintained. The end result was that their game retained thematic links with the original novel but in creating the game the Y6s created and developed their own, carefully designed, imagined world. The Y6s were the original game-makers in that their game-elements had a clear design, with intended purpose and meaning. However, during play the Y6s showed a willingness to re-negotiate this meaning through playful dialogue with their peers in order to facilitate the ARG experience. It soon became evident to the Y6s that, when engaging with the game during play, new stories were generated in the minds of the Y5 players. These new stories stemmed from the interpretations of the players and often necessitated the creation of new game elements by the Y5s and Y6s via the message boards. These new texts were crucial to play in enabling the players and designers to construct and shape meaningful experiences and narratives. This iterative process sharpened and developed the Y6 children's understanding of the transformative effects of play, wherein the game elements they had initially designed were used by players for the purpose of completing the quest. As the Year 5s interpreted and appropriated the ludic and narrative functions of the game elements, both the players and the puppeteers (the designers) continued to design and shape new game elements on the message boards. In so doing they engaged in story-telling together and negotiated the rules of play. During play, these Y6 children embraced the role of puppeteers and accepted the creation of meaning by players

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as an important part of perpetuating play. The designers created the ARG using everyday technologies and objects and in this explored and exploited the affordances of different modes and media such as websites, webcam footage, phone calls and artifacts. However, through observing and negotiating the players' engagement with the modes and media during play, the designers deepened their understanding of the communicative potential of the game-elements they had created.

This ethnographic study represents one element of my ongoing research into alternate reality gaming in primary school settings. The field work, which was undertaken over two years, consisted of a pilot study which fed into the main study the following year. The Y6 designers mentioned in this paper are taken from the main study. However it is important to note that in the previous year they had been involved in the pilot study as Y5 players, as this inevitably affected their design choices. The data collected included interviews with designers and players, teacher observations, and the texts created throughout the planning, making and playing stages. This is work in progress and through analysis, issues pertinent to literacy, education and game design are currently being investigated. These include narrative and ludic construction, adaptation, notions of realism, and questions surrounding authorship. Rather than attempting to address all of these issues, the focus in this paper will be to outline the role of the Y6 designers and the narrative and ludic understandings that they demonstrated and developed in the process.

MY ROLE AS DESIGNER

As an action-researcher and teacher, I was a co-designer of this project alongside the children in my class. I planned a sequence of exciting leaning opportunities which met the requirements of the National Curriculum and endeavoured to ensure that individual lessons and the sequence of sessions were flexible enough to enable the children's reflections and understandings to impact on the construction of the structure and content. This was a cross-curricular project with a particular focus on developing the children's literacy skills and their understanding of game design. Throughout the process there were numerous planned opportunities for exploratory 'book talk' and 'game talk', and regular project meetings took place so that the children and I could reflect on our progress and consider the 'next steps'. The children contributed to the pedagogic construction of the project and were encouraged to develop and share their understanding, expertise and ideas in discussion with others in the class both online and offline. In this process they used the same communication technologies to plan and design the game as were then used to play it.

When introducing the project to the Y6s I explained that we were going to create a game for the Y5 children to play, based on the story *The Mighty Fizz Chilla* by Philip Ridley. I had carefully selected this as the foundation for the project because of its structure and thematic content, both of which I hoped the Y6 children would would engage with critically during the designing and playing stages of the ARG. The book explores the experiences of a boy called Milo as he helps the Captain in his quest to track down a mysterious beast called the Mighty Fizz Chilla (MFC). This quest structure was to form the basis of our game design. The other characters in the novel conspire to create an immersive experience for Milo in which he becomes an unwitting participant in and instigator of the fictional events that unfold. Not all the characters that Milo meets in the novel are who they seem to be; in fact one of them is an actor in disguise. This idea of purposeful deception I hoped would be useful when the Y6s were thinking about how they would interact with the Y5s during play. Milo is told many stories by different characters, the content of which he pieces together in his mind and uses to help him makes decisions regarding his actions. This concept of a distributed narrative was crucial to our game design. In this novel boundaries between fact and fiction are blurred, until at the very end the 'truth' is revealed. This theme resonated with the aim and purpose of our ARG, particularly with regard to the ending of our game, when the Y6s would shed their disguises and reveal themselves as the designers of the experience. I challenged the Y6s to 'bring the story to life' for the Y5s and asked them to consider ways in which they could attempt to convince the Y5s that the story was *real* and that the sea creature was now heading towards the school! With these instructions I hoped that the children might begin to explore the 'This is not a Game' dissimulative rhetoric which has become synonymous with ARG design and play [7]. I then explained that in order to find the beast, the Y5s would have to 'follow our trail' and 'solve the problems' we set them.

Although the Y6s had played an ARG as part of my pilot study the previous year they had never designed an ARG before. To help them to better understand the structure of the game and their role within it I designed a diagram to help them. (Although this visual aid is informed by theories of game design and reader response it is not intended as a theoretical model.) (See fig.1)

Figure 1: The 'web of clues'.

The aim of the game is represented by the small pentagon in the centre of the diagram labeled 'the beast'. This the Y5s need to find, kill or tame in order to complete the game. Finding the beast therefore could be considered the 'win state' and is intended to be a satisfying outcome for players. The flies in the diagram represent 'significant information' the Y5s will need in order to achieve their aim. These flies were information that the Year 6s distributed across a variety of modes and media, and could be viewed in ludic terms as part of the 'game economy' in that they needed to be 'collected' by players. However, in addition to this ludic function, the game-elements also provided information which served a narrative function. These flies were referred to in the design process as 'clues' and from a reader response theoretical perspective could be seen as being similar to Roland Barthes' 'nucleic elements'. Barthes explains that in a novel:

> units are not all of the same 'importance'. Some constitute real 'hinge' points; others merely 'fill in' the narrative space separating the hinge functions. Let us call the former cardinal functions (or nuclei) and the latter, having regard to their complementary nature, catalysers.[1]

These clues or 'nuclei', provide 'significant information' which will help the Y5s complete the quest and find the beast. These clues might be found on a website, in a film or indeed in an artifact which arrives in the post. However, the game-elements also communicated information which, although not vital, served a narrative function in constructing a context for the clues. Each coloured section on the diagram represents a group of Y6s who are responsible for delivering the information to the Y5s by communicating 'in role' as a character from the story. Not only is the information from each character distributed across a variety of modes and media, but the information needed to solve the mystery is distributed amongst all characters. The grey areas on the diagram are indicative of the lines of communication between the Y5s and Y6s during play, both online and offline. This 'grey area' serves a dynamic purpose as it is here that new game-elements are produced and dialogue can take place. The questions which surround the 'web of clues' are indicative of the type of questions the Y5s might ask whilst engaging with the game elements and searching for information. By accepting the challenge to find the beast it was hoped that the players' curiosity and desire for the game to continue would lead them to act on the significant information they uncovered. The spiders, then, represent the Y5s who are poised to catch and 'collect' the clues and interpret the information.

THE ROLE OF THE YEAR 6S AS DESIGNERS

Each student's role as designer of this ARG was a composite of game-maker, story-teller and puppeteer (also referred to as puppet-master). Before play, in their roles as game-makers and story-tellers, they produced a variety of game elements which were inspired by and transformed the content and structure of the original novel. They explored the potential of different media to conceal and convey information by using web pages, films, phone calls and artifacts, each of which served a dual function in the game; ludic and narrative. In creating a parallel world complete with characters, settings and history, the Y6s distributed a complex narrative over and through a wide range of modes and media. As story-tellers they recounted fictional events in role on message boards and through film footage, in addition to embedding narrative on new sites and character WebPages. As game-makers the Y6s designed an opportunity for the Y5s to embark on a quest in which, if they accepted the challenge, they had to actively seek out and act upon information that might help them catch the beast. The Y6 designers scattered many clues across the various game-elements: 'significant information' which would help the players achieve their aim. These game elements were revealed to players through a series of 'significant events' which were staggered over the course of a week in order that the game might retain an emergent structure that could respond to the input of the players.

During play, the Y6s continued to function as game-makers and story-tellers, but in addition became puppet-masters whose role it was to guide the players. Jane McGonigal explains that the role of puppet-master is similar to that of the dungeon-master in table top role-playing games, in that both shape the narrative and play through dialogue with players. However, she highlights an important distinction: whilst dungeon-masters are known to players and their intervention is overt, the role of the puppeteer is more covert and secretive. McGonigal explains that, 'Puppet masters are the first real-time, digital game designers. An invisible creative team composed of shadowy, often anonymous figures, they work behind the scenes as the writers, programmers, directors and stage managers of live pervasive game play.' [8]So the fictional characters which the Y6s had created held an important ludic function. The puppeteers assumed the identity of these characters when communicating with the Y5s during play, thereby concealing their role as the game-designers. The Y6s quickly identified and utilised the possibilities of online media to assist them in this subterfuge, creating character web pages and message boards, both of which functioned as virtual masks behind which they could hide. The Y6 children wrote 'in role' and constructed characters who were knowledgeable (and helpful) and who could assist players by revealing useful clues and advice that would help the players complete the quest. They also utilized the convention of first person narration, as the information that each character reveled was deliberately subjective and partial. The Y5s would have to communicate with all characters to solve the mystery of the beast. The role of the puppeteer enabled the designers to clarify and negotiate the ludic and narrative meanings of the pre-designed game elements with the players in order to facilitate meaningful and enjoyable play. In end-of-project

interviews the Y6s reflected on the way the information had been distributed and conveyed through the game-elements. They considered the role of the players as agents in the game and began to consider the idea that perhaps the players had been game-makers and story-tellers too!

MAKING THE GAME-ELEMENTS

In this section I have selected the work and insights created and expressed by members of one team: 'Cressida's group' (Edward, Amilie, Imogen and Mark) as illustrative of what was a highly complicated design and complex learning process. I will use examples of the game-elements they produced and explore the way they functioned as both ludic and narrative components in the game by providing 'clues' and 'context' simultaneously. Through the careful selection, manipulation and appropriation of modes and media these Y6 children responded to the challenge to 'bring the story to life' and 'design a game for the Year 5s.' I will draw on data collected in end of project interviews to highlight the way the designers developed an appreciation and understanding of the learning and literacy practices of the players as the Y5s negotiated and interpreted the game-elements. As these designers reflected on the way their game was received by players, they considered the effectiveness of the modes of communications they used and assessed the way in which the ludic and narrative elements elicited responses during play.

All of the game elements that the Y6s created served a narrative function in addition to their ludic purpose, in that they provided context as well as vital clues. One example of this was the character webpage created by Cressida's group (See fig. 2). The character of Cressida is described in Ridley's novel as 'frothy'. Her actions and

Figure 2: Cressida's personal webpage.

words are exaggerated and theatrical and she is prone to embellishing accounts of events with fictitious or extraneous detail. Cressida's speech is also sprinkled with superlatives and terms of endearment such as 'beloved' and 'darling'. Although there is not scope in this paper for a full multi-modal analysis of Cressida's online identity as constructed by the Y6s, it is evident that that the choice of text colour and font as well as the written content demonstrate the Y6s' understanding of this character. In re-creating the identity of Cressida through their inventive use of mode and media, in a process Gunther Kress terms 'transduction,'[6] they made good use of the opportunities afforded by website design. They decided to communicate the relationships between Cressida and the other characters by constructing hyperlinks on her 'friends page' which connected her site to other fictional characters in the game, in addition to signaling her interests by linking her page to other websites in 'the real world.'

In the end-of-project interview, the children reflected on how their game-elements had been used by the players during game play. Edward had noticed that the players had not always interpreted the relationships between characters correctly despite the 'friends' page they had designed. He commented, 'I don't think that the year 5s even picked up that Fliss was Milo's mother.' He went on, 'honestly I don't think they did get much from our character websites...I think the message boards was where they got most of their information from.' However, Imogen who had created the website with him disagreed and responded:

> I think the character web pages helped them a lot because... if we hadn't done the character web pages they wouldn't know the...kind of outline of their personality in a way, so if we hadn't had the character web pages they wouldn't know that Cressida was wild, was really eccentric and exaggerated...They wouldn't know all the extra little bits that put the ... whole character together so without those little tiny pieces it wouldn't really be whole.

In this discussion Edward and Imogen raise issues about the function of Cressida's website as a game-element designed to convey information. Edward, as well as identifying narrative contextual information that was missed or misinterpreted by players, may also be reflecting on the ludic function of the website: to impart 'clues' and to help the players find the beast. It is possible that he believes the message-boards were more effective at conveying this 'significant information.' Imogen however certainly suggests that the narrative function of the information on the website provides important context. Indeed, as has been mentioned, the character of Cressida serves an important ludic role on the message boards as a conduit for the Y6s' comments and suggestions. The character website therefore serves an important narrative function in introducing the character to the players.

The children understood from the brief I had set them that the Y5s would need to follow 'our trail' and 'solve problems'. Cressida's group decided that they would leave a trail of clues that would draw the players' attention to the importance of a mysterious rock that Cressida owned. As part of this trail they used a webcam to film a 'diary entry'. This served a ludic function in that it conveyed the vital message that Cressida possessed the rock, but it is the narrative which surrounds this fact that signals its significance as an item of importance. Once again the designers exploited the affordances of the media. The Y6 child, using her knowledge of Cressida from the book, disguised herself as the character constructing a costume for herself (see fig. 3). She drew attention to the item by

Figure 3: Cressida's webcam diary entry.

continuously stroking the rock on screen during filming. This is action is consistent with Cressida's character in the book, but I would suggest that the action here is designed to draw the players' attention to the item. With excitement in her voice, 'Cressida' stated:

> I found this strange looking rock, erm, last night on the beach and it seems like it's got some strange sort of markings on it, and I don't really know what to do with it. It might be cursed or something. I better send it to the museum. Ah god it's utterly utterly exciting and, erm, I've also found a lot of other strange looking things. I better go and put this down.

Perhaps the word 'strange' is repeated to stir the curiosity of the players. Cressida seems uncertain what to do with the rock. Does this suggest the possibility that perhaps the Y5s could persuade her to send it to them?

On receiving the rock, through the post, the Y5s would be faced with trying to decipher a strange code carved onto its surface (see fig. 4). In order to decipher it the Y6s would have to use information provided by the other characters in the game. Cressida's group had already decided, in consultation with another group, that the Y5s would not be able to crack the code with out the 'significant information'

Figure 4: Cressida's rock with coded message

contained in the potion book owned by the character 'Dee Dee 6'. The Year 5s would need that too! Dee Dee 6's group therefore included this code information in a potion book (see fig. 5).

Figure 5: Dee Dee's potion book with coded message.

that they would send it to the Y5s when asked. The game design required that the players work together to collate, interpret and apply the information they received in order to crack the code and ultimately find and tame the beast. Once deciphered the message on the rock reads '13' which, in the game, is the number of the key needed to open a box of potion ingredients, sent by Dee Dee 6, that arrive later on in game play. The Y6 designers had pre-planned a complex trail of information and a sequence of 'significant events'. During planning meetings the ideal and predicted actions of the players had been discussed. The game design required that the players make the 'right' decisions in order for the game to continue to unfold as the Y6s had planned. The players also needed to act on the information they received. Imogen explains:

If they got rock and then they just had gone straight to the piece of paper and figured it out and then just left it...then that might have not worked with everything else, but because they found the paper and then compared it to the keys, sort of, thirteen the other code...And it was the same that happened: something else happened that helped them...So its like if, erm, so choosing the, erm, the one that was right. Like the path that was right, like, erm, with the key sort of thing helped them, but if they'd have gone the other way, then it might have not really helped them at all.

The designers, then, had planned for the Y5s' ideal interpretations of the 'clues' and had tried to highlight the 'significant information' using narrative techniques . However, during play they used the opportunity to interact with the players and shape their responses to the game-play. This was important when trying to help players navigate their way through the game. In this process the designers developed an understanding of the unpredictability of the players' interpretations of texts and events.

INTERACTING WITH THE PLAYERS

For the Year 6s, knowing how the Year 5s were responding to and navigating the ludic and narrative functions of the game elements was essential to the game play, and an effective feedback loop was therefore very important. There were four feedback loops incorporated into the game design all of which enabled the designers to ascertain how the players were responding. The Year 5s communicated with the fictional characters (and by proxy the Y6s) through project diaries, webcam 'diary entries', message boards and a phone call. Of all these feedback loops the message boards were arguably the most effective and therefore significant. Marla, a member of the Captain's group explained:

I feel as though we were like connecting to the year 5s in that, erm, in the ocean estate message boards…like, if they were feeling as though, like they were feeling confused, we could help them out and then go on the message boards and, like,...ask them questions which helped us work out, like, in what way the year 5s were confused and then we could maybe change some of the clues and artifacts to suit how they were feeling to the project, so I think it was very important.

The message boards enabled the Y6s to gauge the Y5s' understanding, but also allowed both players and designers to create new game-elements in the form of written texts. The Y5s communicated their understanding of the evidence they had collected and asked for information or objects that they thought they needed to complete the quest. The puppeteers reacted to the ongoing input of the players through purposeful and playful dialogue. The way the puppeteers responded to the players' ideas, suggestions and questions shaped the game play as did the players subsequent actions. The designers gave positive feedback on the message boards which let players know they were on the right track and were asking the right questions. For instance, when Y5s asked the Captain for maps, the Y6s replied *as* the Captain, and agreed to send them (see fig. 6). In this way they gave positive feedback which rewarded the players for asking the 'right' questions, as in this instance the players action matched the sequence of events that had been pre-planned by the designers.

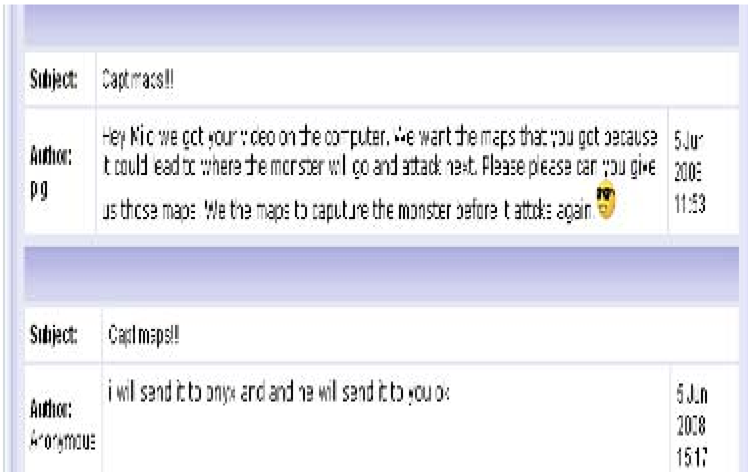

Figure 6: Positive feedback.

However, negative feedback was sometimes given to try and nudge the year 5s in 'the right direction'. When the Y5s interrogated Cressida and asked her for information about the MFC she informed them that she knew nothing of the creature, whilst suggesting that if she was asked another question, she might be able to help (see fig. 7). This could be considered negative feedback in ludic terms as in the Y6s game plan it was the Captain or 'Mr. Chimera' who would impart this information.

hi ,cressida

we have watched your webcam and you found a a strange rock

right. Me and rocky are wondering if you are realy blind the reason we are asking this is because one the video you " i found a rock" but you should of said "i trip on something and also we think you have something to do with the MFC
!![…]!!!

Beloved, of course i am blind! I can't see anything,because i'm blind but i am extreamily good at seeing what things are by using touch.

If you have anything else to ask then you know where i am, i'll be utterly glad to awnser.

also, i thought i ought to inform you that i know nothing of this glorious M.F.C.

xx Cressida Bell

Figure 7: Negative feedback.

However, her response had a narrative function too. The message helped to maintain her identity as constructed through the website as the colour and font she used were consistent in both website and message boards.

Edward was intrigued by the way the players constructed the narrative out of the information they had distributed across the various modes and media:

> We're not creating the project. They're creating the project...Because they're, erm, they're choosing how the project's going to work by giving us their ideas, because sometimes they give us completely mad ideas, but we worked around their ideas to create it differently. If they got everything right it would just…it would just go the way we wanted it to – the same – but because they had different ideas it meant that we could…that our project was changed in terms of a different way...I think they were actually telling the story to us more.

Edward recognises that the players' input shapes the game play.

In addition to contributing their ideas and creating new game-elements on the message boards the Y5s also appropriated everyday objects and items and incorporated these into the game. The choice of elements the Y5s introduced was informed by the ludic and narrative information they had gathered. One player recalls, 'The potion asked for the tears of a young boy and I remember Omar trying to make himself cry!' In addition to this, whole objects and areas in the playground became game elements which would help them catch the beast. One player told me that they had carried on playing in break time and had started examining the drains for more evidence. The creation and appropriation of objects during the game was not always predicted by the Y6s and added a dynamic and unpredictable quality to this peer-to-peer game play.

It was not only the narrative that the children felt was negotiated during play, but also the rules and the aim of the game. Interestingly, the aim of the game was not made clear from the start. Edward noticed this:

> Generally in a game there's usually some kind of goal you're trying to find that's going to be fixed; its always going to be the same, but this time because…we're trying to find the MFC, and I don't think they were very, I don't think they really knew what the MFC was properly.

In fact during play the Y5s decided that there were two monsters on the loose and after a mid-game planning meeting the designers decided that this would be 'too complicated' to accommodate and therefore new texts were created on the message boards which made it clear that was only *one.* In this way the aim of the game was negotiated through game-talk. Some children, like Amilie, didn't think there were rules:

> Well, like not really rules, but more like instructions. Like they knew they had to find clues, and they knew they had to work with the clues and…But in a way they didn't really get given a set of things to do; they made it themselves and made them.

Other Y6s felt that they had conveyed the rules to players. One player explained, 'Erm, I think it's like that we're the instructions on how to play, because we're the makers and they're the players of it.' Jesper Juul and other game theorists sugggest that rules are, in general, non-negotiable and should be 'above discussion' [5] during play. Although Juul aknowledges that this is not always the case he explains that 'the dominant way of playing games is to agree on the rules *before* the game starts.' Although I have yet to come to a conclusion regarding the way that the rules were constructed by the children, nonetheless, my feeling is that rules *were* communicated to the players by the puppeteers during play. The play that was supported by those rules, however, appeared to be aligned with the type of free-play, 'paidia' described by Roger Caillois [2].

PEER TO PEER PLAY: DESIGNING GAMES THAT MAKE STORIES

The play and design of this ARG was a rich learning experience for these young puppeteers, as it required that they reflect on their roles as game-makers and story-tellers. The game-elements that had they had carefully created were interpreted and used by players in order that the quest be completed. Unearthing the embedded narrative was not the only purpose of the game; it was also part of the pleasure. However, through their unpredictable actions, players created new stories and refined the original ones as they entered into dialogue with the puppeteers. In discussing tabletop games, Will Hindmarch suggests that:

> The goal of a storytelling game isn't to produce a good story, it's to participate in good storytelling. Storytelling games are about conceiving and telling stories, not the enjoyment of having a story or reading one. [3]

However, during this ARG the players were both consumers and producers of stories. These stories were generated through their interaction with the game-elements and the designers, and enabled both players and puppeteers to engage in meaningful play. Because the creation of an ARG was such a new and unfamiliar challenge for the designers, the children drew on their experiences of both computer games and narratives to help them articulate their experience of ARG design and play.

Interestingly two children in Cressida's group made references to simulation games when describing their experience. Mark conceptualised the process of ARG design as one of world building:

> In *The Age of Empires* you make a town but in ours we make webcams, we make a book, we make erm we make a whole world sort of thing.. We make Ocean Estate like. We sort of make that place.

At first this appears to resonate with Henry Jenkins concept of 'game design as narrative architecture', in which computer games are described as 'spaces ripe with narrative possibility' [4]. However the fact that these ARGs are produced with real-world technologies and utilise both online and offline spaces has considerable implications for the way the space is explored and narrative embedded. Amilie chose to make a connection between game design and her experience of playing *Sims* in an attempt to express the unpredictability of player responses to the game:

> Like you make, like, a house and you make properties for people to live in and [in this] you kind of wait and make a mystery for people to solve...Well, like, you don't really decide how they [the Y5s] react to it and you don't in Sims either; you can't, like, decide whether they like it and you can't decide how they would live in it...So like it's the same in that you can't decide how they're going to solve it.

The Y6 designers had, from the beginning of the design process, tried to imagine how the Y5s would respond to the game. Before play they hoped that that the players would adopt the role of investigators, uncover information and through their interpretations and actions solve the mystery about the beast on the loose. However, the designers had, of course, set up a myriad of ludic and narrative possibilities open to a number of interpretations. Katie Salen and Eric Zimmerman suggest that, 'playing a game is synonymous with exploring a game's space of possibility…if a system is emergent, exploring possible relationships among game elements is continually engaging.' [10] As game-makers and story-tellers both the Y5s and Y6s felt that their actions were meaningful as their joint actions helped to direct and enable play to continue. As puppeteers, the Y6s watched the responses of the Y5s and began to develop an understanding of the way the story and game unraveled in response to the conceptual links that the players made.

The Y5 players had to make links between the information that had been scattered across websites, films, phone calls and artifacts. They had to make connections between the game-elements, interpret them and act. The Y6s developed an appreciation of the challenges players faced when trying to collect and collate they information that had been dispersed. There was so much information, that in interpreting the ludic and narrative significance of game-elements, the Y5s investigated some pieces of information and overlooked others. Edward understood that the choices the players made affected the stories that were experienced: 'it's got lots of different stories... some of them might not be used, some of them might.'

The iterative design and play process prompted the Y6s to draw insightful comparisons between the game and narrative they had produced with the Y5s and the novel that inspired it. Here Imogen attempts to describe the way the Y5s had to make sense of the ideas generated by their experience of the game:

> In the book its more of, quite straight forward... Milo meets the captain, then this happens, then this happens but in...our kind of...project its more this happens, but it could kind of go anywhere, like a kind of spider diagram web sort of thing, so its like loads of different things could happen from just one subject, but there's loads of different subjects that, some that link together, so some link together and its kind of different to the book, because in the book one thing happens, one idea, and then another thing happens and one idea and then like a few of them are linked, but that's like sort of…Well, erm finding the rock links to Cressida, like finding the code and Cressida and, like the code from that says what key, sort of that says thirteen, so from that that's a link and then from the code on the rock it can lead anywhere or to anything and it can be anything or say anything and it can also, its like it could lead to trying to find and contact Cressida and things.

This game was ripe with opportunities for the players to act and 'loads of things could happen'. The Y6s could not predict what the players would do with the information and artifacts they had designed. Imogen's phrase 'it could go anywhere' implies that the directions in which the play might lead the game and narrative were infinite, perhaps even random. Yet amazingly, the players did make sense of the ARG in much the way that the designers had hoped and planned for. The sequence of events that was experienced by players was ordered by the designers, and the next steps and conceptual links were negotiated and shaped through playful dialogue. At the end of this excerpt Imogen mentions that they could contact Cressida and thus be guided by the puppeteers. Dave Szulborski outlines this sort of guidance:

> In an Alternate reality game, an interactive encounter, while pre-written, doesn't have to anticipate every possible choice a player might make, because each encounter is being managed in real time by one or more of the creators of the work. In the same manner that a skilled author directs readers to certain discoveries and understandings throughout the course of his novel, an experienced PM can do the same thing in an interactive portion of the game. [9]

In this paper I have outlined the learning journey of a group of Y6 designers who designed and played an ARG with their peers. In this process they became expert game-designers and story-tellers. Before and during play, the children discussed and developed their ability to

communicate with their peers through a wide range of modes and media. They raised issues surrounding notions of narrative/ludic intention and narrative/ludic comprehension and drew from their knowledge of games and stories to articulate and create these new experiences. Not all the children, or indeed I, were entirely comfortable labeling this project as a game and often during interviews and discussions we referred to it simply as 'our project'. However, it is perhaps because this game design inhabits such a liminal space that we learnt so much during the process. Salen and Zimmerman suggest that:

> The terrain along the borders of more rigid definitions offers fertile ground for insight and investigation. In these playful and liminal spaces, assumptions are challenged, ideas evolve and definitions change. It is this kind of transformative play that is at the heart of our model of game design.[10]

As a researcher and teacher my ideas about the types of literacy practices the children engaged in this ARG were challenged. In this paper, I have tried to map out one part of the learning journey I enjoyed with the children in my class but I have yet to come to grips with the ways in which terms such as 'narrative', 'story', 'game' and 'play' can be most usefully applied to this ARG. I have attempted to outline the ways in which the game-elements they created provided ludic and narrative information, the meaning of which was transformed by playful negotiation. In analysing and interpreting the data further I hope to explore and reflect on the themes that emerged through the children's discussions and interactions more fully, and in so doing, I hope to be able to illuminate the complex interrelationships in this ARG between games and stories, players, authors and designers.

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