The design and experience of the location-based performance Uncle Roy All Around You

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Introduction

Since 2001, the artists group Blast Theory and the MRL at the University of Nottingham have created and toured a series of location-based artistic performances. These have mixed elements of computer games and live action to create experiences that are simultaneously accessed by mobile and online participants. The overall aims of this collaboration have been twofold: first, to create professional touring works that both use and challenge emerging technologies; and second, to enable researchers to study these technologies 'in the wild' so as to inform further technology development and help them articulate more general design principles.

The collaboration between Blast Theory and the MRL dates back to 1996 and the inception of Desert Rain, a theatrical performance that drew its inspiration from the first Gulf War. This took form of a computer game in which six players at a time were sent on a shared mission in a virtual world to locate and identify six targets, people with different connections to and perspectives on the war (Koleva, 2001). Desert Rain was notable for the way in which it combined aspects of computer games with live performance and integrated a collaborative virtual environment into an extensive physical set. In particular, each player experienced the virtual world via their own 'Rain Curtain', a two meter by two meter screen composed of water spray into which the image of the virtual world was projected, and through which actors and the players themselves would pass during the performance. Early performances of Desert Rain were subject to ethnographic study, in which social scientists observed players, performers and technical crew, both live and using video recordings, so that they could describe the processes through which Desert Rain was made to work as a performance. This study revealed the importance of orchestration processes and led to proposals for new orchestration technologies (Koleva, 2001)

Can You See Me Now?

The second collaboration between Blast Theory and the MRL, Can You See Me Now? (CYSMN), introduced a focus on mobile and location-based technologies (Flintham, 2003). Originally created for the Shooting Live Artists festival in Sheffield, UK, in December 2001, CYSMN once again mixed the worlds of computer gaming and live performance. Structurally, CYSMN is simply a game of chase in which members of the public are chased through a city by a team of performers. However, there is a twist; the public players are online in a shared 3D model of the city, while the performers, equipped with handheld computers with GPS receivers and WiFi wireless networking, have to run through the streets of the actual city in order to catch them. As they run, so the performers discuss their tactics and describe the city

around them over a walkie-talkie channel, and this is streamed out to the online players who are therefore able to tune into the performers' experience of the city and can adjust their own tactics accordingly. For example, online players may come to realise that crossing an empty virtual road in the 3D model may cause a performer to dodge the traffic as they negotiate a busy city street.

Perhaps the most significant innovation in CYSMN was its underlying idea of connecting an online virtual world to a physical city which in turn required the development of the first prototype of a new software platform to connect mobile devices with position sensing to a publicly accessible city 3D model. Like Desert Rain, CYSMN was subject to ethnographic study which drew on video material and system logs of players movements and text messages and which identified the major impact of GPS inaccuracy and limited GPS and WiFi coverage on the experience along with the ways in which performers adapted to these issues in order to successfully deliver an experience to the online players. This led to new proposals for how the designers of location-based experiences can deal with their inherent uncertainties. In essence they can remove them, hide them, manage them, reveal them and even exploit them, the latter by drawing on them as a source of ambiguity or directly incorporating them into game play, for example requiring players to move in and out of connectivity, a technique called 'seamful design' (in contrast to the idea of 'seamless design' that is often associated with the idea of ubiquitous computing) (Chalmers and Galani, 2004).

While CYSMN was successful as an artistic product, winning the 2003 Prix Ars Electronica for Interactive Art and touring to many cities worldwide, it was really only a first attempt to create a new kind of performance that mixed physical and virtual cities. In particular, it suffered from one major limitation – that the public only played online. The next step was then to create a performance in which the public would be both online and on the streets. This performance, called Uncle Roy All Around You, is the main focus of this article.

Uncle Roy All Around You

Uncle Roy All Around You mixes street players who journey through a city in search of an elusive character called Uncle Roy, with online players who journey through a parallel 3D model of the same city, are able to follow the progress of street players, can communicate with them and can choose to help or hinder them. The core artistic theme of the work is trust in strangers – be they remote players, Uncle Roy, the technology or even passers by. We begin with an overview of the experience from a street player's and then an online player's perspective.

A street player's experience

Street players purchase a ticket for an experience that will last for a maximum of one hour. On arrival at the venue they hand over all of their personal possessions including bags, wallets, mobile phones and keys, in exchange for a handheld computer, a ritual that is intended to increase their sense of anticipation, vulnerability, dependence on Uncle Roy and isolation and disconnection from the everyday experience of the city. An actor briefs them that their mission is to rendezvous with Uncle Roy and explains how to use the handheld computer. They then head out into the city.

Their first task is to find a red marker on the PDA map, to get to the physical location this indicates, and then declare their position to Uncle Roy. Street players declare their position by using the stylus to drag the 'me' icon on their PDA map to their current location and then pressing the 'I am here' button (figure 1).
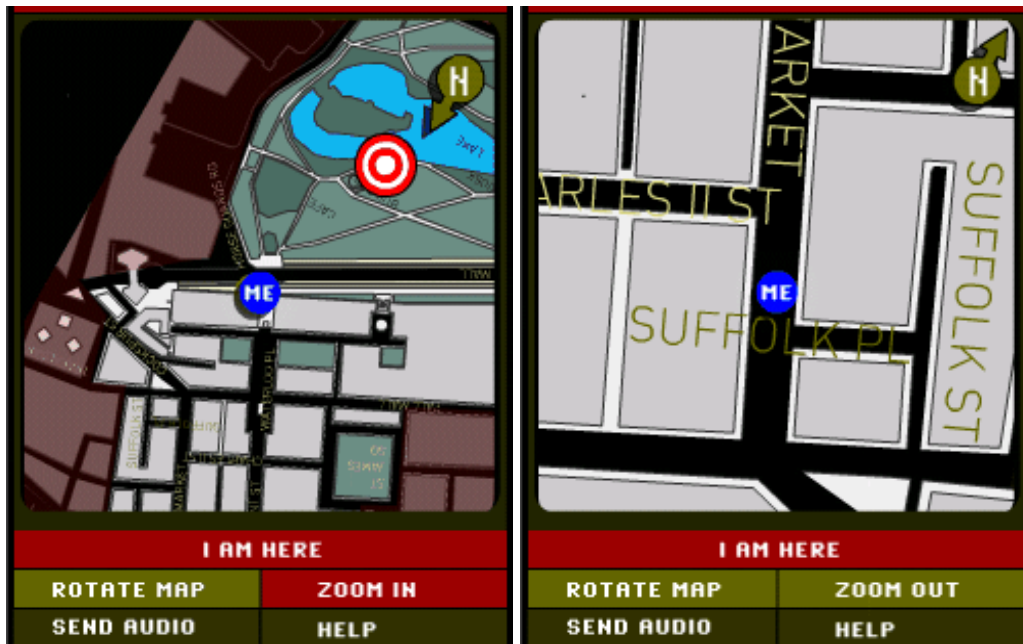

Figure 1: street player's map, zoomed out and in

Whenever they do this, they receive a short text message back from Uncle Roy that provides them with a clue as to where to go next. In this way the street players undertake a journey through the city, following a trail of clues that lead them in search of their eventual goal – Uncle Roy's office.

Figure 2: following clues in search of Uncle Roy's office

The clues are preprogrammed (Uncle Roy is therefore the automated voice of the game, not a live actor) and are attached to different zones of the game map. A street

player gets an initial clue the first time that they declare themselves to be in a region and a second and different clue on subsequent declarations. A key feature of the game is that Uncle Roy's clues are deliberately designed to be ambiguous – some are relatively direct and useful, while others are misleading to the point of being mischievous, encouraging players to follow diversions, drawing on the history of the local environment, implicating passers by in the game, heightening the sense of being watched and also casting doubt on the intent and personality of Uncle Roy, especially the extent to which he can be trusted. Clues also constantly remind players that they are on limited time and that the clock is ticking. Examples of clues include:

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Good. I want you to walk towards the Mall. Watch a tourist cross
the road and follow them. There are some hidden steps among the
buildings. You have NN minutes remaining.

You are doing well. Drift towards Buckingham Palace. After a
couple of minutes click I am here. You have NN minutes remaining.

It's not a shock. The borders are policed. It's always been so.
Look for a road leading off the square – one you have not been
down before. Walk down it. You have NN minutes remaining.
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And when they finally reach the zone containing Uncle Roy's office:

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Go to number 12 Waterloo Place and ring the buzzer marked Roy.
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As they follow Uncle Roy's clues, street players may also begin to receive text messages from remote online players who, it becomes apparent, are able to follow their progress through the city and who may appear to know important information such as the whereabouts of Uncle Roy's office. Street players can reply to these messages by uploading short (seven second) audio messages and so can try to establish a relationship with online players and enlist their help. However, online players have their own objectives. They have been told to enlist street players in a task, retrieving a postcard from a location in the city so that it can be posted to them. Postcard locations include in bars, telephone boxes and in the saddle bags of chained up bicycles. In this way, street players are encouraged to cross the boundaries of normal behaviour in the city which in turn, requires considerable trust in online players and in the game itself.

The crossing of boundaries becomes more necessary and more significant in the final stage of the experience. Eventually most (but not all) street players find their way to an office door in the city – the door to Uncle Roy's office At this point, their PDA switches over to giving them a pre-scripted and timed series of text instructions. They are asked to press a buzzer by the door. The door slides open and they are told to step into a deserted office and asked to look around. The office shows signs of recent habitation – the lights and radio are on – and on the desk is a postcard with the question "when can you begin to trust a stranger?" They are invited to fill in their answer to this question (figure 5) and then to sit in the chair, look up at a nearby camera that is mounted on the wall and picture a stranger in their mind.

Figure 5: writing the postcard in the office

After a few more minutes, they are asked to leave the building – taking the postcard with them – and wait in a nearby telephone box. The phone rings and on answering it, a human voice tells them to walk around the corner and get into a waiting limousine. An actor climbs in beside them and the limousine pulls off. During the ride, the actor asks them a sequence of questions about trust in strangers, and tells them that somewhere else in the game another player is answering these same questions. Finally, he asks them whether they are willing to enter a year long contract to help this stranger if ever called upon. If they agree, he asks for their address and phone number, the car pulls up by a public postbox and the player is asked to post their postcard – addressed to Uncle Roy – to finally seal the contract.

Figure 6: The telephone box, limousine and postbox

An online player's experience

An online player, connected to the game over the Internet, journeys through a parallel 3D model of the game space. They move their avatar through this model using the

arrow keys on their keyboard, encounter other online players and send them public text messages. Online players also access details of the current street players in the game, including their name, gender, a brief description and a photograph that was taken when they registered to play. They can choose to send private text messages to individual street players or listen to their most recently uploaded audio message.

Figure 7: online player's interface: own avatar (white figure), street player cards (right), street player's position (red sphere) and text message boxes (bottom).

Online players find photo objects as they explore the model. Entering these triggers the display of photographs from the actual city streets at this location, one of which is labeled as Uncle Roy's office (figure 8). In this way, online players can find out useful information for street players.

Figure 8: Accessing a photo of the office door

Finally, whenever a street player enters Uncle Roy's office, online players are invited to join them. This involves seeing a live webcam view looking into the office which enables them to see the street player in person for the first time (figure 9).

Figure 11: seeing the street player on the office webcam

At this point, they are asked the same questions that the street player is asked in the limousine, including whether they will commit to help a stranger for the next year, in which case they enter their personal contact details.

After the game, street players and online players who made a commitment to help a stranger are (manually) paired up and sent each other's contact details. They have entered a year-long contract to help one another!

The experience of Uncle Roy All Around You

We now focus on how players actually experienced Uncle Roy All Around You. At the time of writing, the work has been three times, in London, Manchester and West Bromwich in the UK during which time it has been experienced by many hundreds of street players and thousands of online players.

The following observations draw mainly on direct feedback from players through interviews, emails and completed questionnaires that were filled-in by street players directly after their experience, as well as on discussions among the production team during debriefing meetings.

It appears that Uncle Roy All Around You was often a compelling experience, for street players, notable for being disconcerting and even slightly frightening for many street players who used words such as "uncertainty", "mistrust", "ambiguity", "scary", "paranoia", "safety", "fear", "lack of control", "strangers" and "trust" to describe it. Analysis of players' comments suggests that such reactions arose from several features of the experience.

The feeling of being watched and yet being alone

Street players were very conscious of the feeling of being watched while they were in a public place:

> "Very interesting to see how much you can be watched and tracked"

which was heightened by being alone in the city:

> "That whole feeling of being on your own and trying to do something which to me is quite scary – you don't know if you are doing it right" … "scary but great"

In part, these feelings were established through the initial briefing ritual where one had to leave all of your personal possessions behind, heightening your sense of isolation. One player described this in a lengthy email, from which the following are two key extracts:

> "My initial feelings were of slight paranoia because you knew you were probably being watched and certainly monitored. I felt very much on my own with no one to confer with or discuss how to do it, or if it was the right way. This was accentuated by the thought that people may be watching you 'doing it wrong'. I couldn't help but look around me to see whom else might be in on it"

> "Players were asked to leave all possessions at the ICA so I had no watch, mobile or map. This worried me because I didn't know the area and when directed to Pall Mall or other places, I had no idea where these were and unfortunately, the people I asked for directions got it wrong resulting in me heading in the wrong direction. This, however, didn't detract from the experience."

Implicating strangers

As this player suggests, a key strategy was to implicate passers by in the game, even when they were not involved, for example through clues that suggested following strangers:

> "I liked the instructions to follow ppl"

> "The sense of looking at everyone and thinking that they are part of this"

> "I don't think I saw any mad people in the street as I was expecting – although I suspected everyone"

> "Not knowing who was involved and who was watching"

> "The area it was played in gave you the feeling of everyone in London passing being involved"

> "Not knowing who at first was a performer and who was not a performer – everyone is a performer"

> "The sense of fear of strangers"

And for some players, interacting with strangers was also a notable feature of their experience:

> "Asked a bunch of strangers if they were Uncle Roy"

Mixing game play with live performance

The impact of live actors was clearly a significant factor, especially when encountered close-up in a one-to-one situation:

> "The human presence I could feel (people watching, the actor coming and tell my name)"

> "The physical intervention to street players was great"

> "You're given enough to feel safe, but not too safe. Great sense of anticipation. Loved seeing someone approach the car."

> "The feelings of uncertainty and mistrust I experienced when facing your street actors"

Relationship to online players

Street players also appreciated interaction with online players:

> "The kind online gentleman guided me at just the right time"

> "The fact that street players could actually interact with players online"

"By asking online players I managed to engage their attention + help and find number 12"

"Having online help was great, worked in real time"

"It was hard to trust online guys at first"

"When it worked the communication between online & street players was excellent"

Although some players clearly wanted more contact:

"I didn't get any help from online players. I felt a bit abandoned or disconnected too"

"sometimes difficult to get info from online players"

Crossing boundaries

Another key feature of the game was crossing boundaries, particularly going into places where you wouldn't normally venture such as the empty office and especially the limousine.

"Enjoyed going into the building"

"At one point near the end you were directed to get into a car. I felt uneasy about this because you 'never get in a car with a stranger' but you assume it must be part of the game because of the sequence of events that lead you to that point. I probably wouldn't have got in the car if there weren't this sequence of events leading up to it."

This comment about assuming that it is part of the game is an important one. Ultimately street players trust the game producers to look after them and assume that they have been given permission to cross certain boundaries and that this they are operating within a safe framework. As one player put it:

"the last bit was very odd – but u didn't feel too uncomfortable. The set up is lightly connected - it is not blind trust as I have some institutional trust in Blast Theory and the ICA"

Beyond these comments on aspects of the experience that broadly seemed to have worked for street players, there were also criticisms and suggestions for improvement.

A common frustration was with the reliability of the technology (nearly always due to problems with GPRS networking). Although we tried to spot such problems early on from the control room and send an actor to help, ideally without breaking the flow of the experience too badly, street players would sometimes have to wait for minutes, even tens of minutes for reconnection, or on a few occasions abandon the game altogether. Several players commented that the clues were too simple and that the game could have been more taxing or could have avoided you following a set route. Certainly, a few players finished very quickly (within twenty minutes), perhaps because they were 'lucky' or maybe because an online player guided them to the office straight away. Related to this many players said that they would have liked a longer experience. There were a few frustrations that arose from physical bottlenecks, for example having to wait while the phonebox was being used, some park gates being locked and also more general issues with rush hour traffic and rain. Several players would have preferred an automated positioning system (although many appeared not to have noticed the lack of one) and a couple mentioned GPS.

Finally, some players mentioned wanting to be able to share the experience with other street players afterwards. Given the highly subjective nature of an experience such as Uncle Roy All Around You, at least when compared to a conventional theatrical performance, it seems that it may be important to provide a way of players being able to discuss and compare experiences.

The online experience

Turning now to the online player's experience, our overall sense is that thus was often less compelling or coherent than that of street players. The main role for online players was to guide street players and their main payoff was to persuade them to retrieve a postcard and to see them on the office webcam. We feel that this experience was most rewarding if a player had first completed the game as a street player as they would better understand the goals and structure of the game, emphasise with street players' feelings and possess enough knowledge to be able to guide them or indeed, play around with them. Conversely, the experience often seems to have confusing for those who hadn't first been on the streets.

A key issue for online players is establishing and then maintaining an appropriate relationship to street players. Anticipating that it might be difficult to locate street players, engage their attention and then keep in touch with them, we designed the first performance so that an online player could communicate with any street player. While this allowed online players to follow the progress of many street players, we feel that it reduced the likelihood of closely engaging any one of them and conversely, may have led to situations in which a street player was swamped by many online players. Consequently, we amended later performances to enforce proximity driven communication where online players had to remain close to street players in the virtual city in order to be able to communicate with them.

Conclusion – three design strategies for location-based performances

We conclude our paper by drawing out from our observations three general design strategies for location-based performances.

Strategy 1: Use the city as your canvass

Our first strategy is to exploit the existing physical world – in this case the city, complete with its streets, buildings, history and not least its people – as the backdrop for the experience. Perhaps the most successful aspect of Uncle Roy All Around You is the way in which it draws on elements of the city, in both its general theme and through the details of its clues. Three specific tactics here are:

- **Refer to real-locations and draw on the events associated with them**. The clues in Uncle Roy All Around You refer to real places and events that happened there.

- **Use physical locations**. Another possibility is to make direct use of physical locations (in our case, the office, phonebox, and limousine) in a further attempt to blur the boundary between fiction and reality, although this can introduce physical bottlenecks into the experience (our crew in the control room and on the streets had to expend considerable effort in managing access to these spaces and stalling some players so that several did not reach these places at the same time).

- **Implicate passers by**. The city is already full of actors even if they not conscious of it. A particularly powerful feature of our experience is the way in which it suggests that they are part of the performance.

- **Mix live action with pre-programmed content**. The use of actors can clearly be very powerful, although given the expense involved, this is likely to be limited to just a few key moments.

- **Encourage participants to SAFELY cross the boundaries of normal behaviour** - we have seen that this can lead to powerful experiences, but also that it needs to be employed carefully as part of a clearly defined relationship between participant and designer/producer. Under the surface, participants must be able to judge what is genuinely safe and what is not while being able to suspend disbelief and feel what is might be like to take risks – but without actually doing so.

Strategy 2: Exploit ambiguity

A second strategy is to use ambiguity to provoke participants and to ask questions without giving answers. Uncle Roy All Around You employs ambiguity in several ways to create a provoking experience: the 'task' itself is open-ended; the clues are puzzling and invite interpretation, as does the nature of the relationships between players and Uncle Roy. This strategy captures one of the essential differences between artistic experiences and other more conventional applications of computers which are concerned with giving accurate information and supporting efficient completion of tasks and in which ambiguity is seen as a problem. The deliberate use of ambiguity to create engaging interfaces has been discussed in (Gaver et al, 2003) which raised three general design approaches:

- **Ambiguity of information** – present information in a way that demands interpretation, for example deliberately reducing its resolution or in contrast, presenting it in an overly precise way in order to question its validity. This strategy can be seen in the design of Uncle Roy's clues.

- **Ambiguity of context** – where an experience deliberately and sometimes jarringly juxtaposes different structures or genres and so provides multiple simultaneous contexts for interpretation. This is reflected in our mixing of game and performance and the juxtaposition of the physical and virtual worlds.

- **Ambiguity of relationship** – where an experience calls into question the relationship between the participant and the material, challenging them to make intellectual, aesthetic or moral judgments. Uncle Roy All Around You involves extensive use of ambiguity of relationship by questioning the relationship between a player, Uncle Roy, other players and passersby.

Strategy 3: Encourage social gameplay

Our third strategy is to draw on the social relationships between different participants. The pre-scripted content of Uncle Roy All Around is relatively small – a map and some clues – but the relationships between its players are rich. One tactic here is to deliberately give different players distinct perspectives, motivating them to exchange information and work together. This means aiming for quite different, but connected, physical and virtual worlds, rather than a seamless augmented reality style experience. We see this approach in Uncle Roy All Around You where online players can help street players and also in the chase game Can You See Me Now, where online players perceive the physical world through the talk of the street players rather than seeing it directly.

By carefully employing strategies such as these, we believe that artists will be able to create powerful and compelling theatrical experiences that directly involve the public

as participants, that are situated in the city streets and that draw on mixture of live performance and theatre. While there is clearly a long way to go, we hope that this will lead to compelling new forms of theatrical experience. As the Sunday Times commented in it's review of Uncle Roy All Around You: *"if such performances were supported and nurtured by the artistic establishment, Britain could produce its first new theatrical form for years"*.

Acknowledgements

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