

Digital Media and Environmental Interactive Performance

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Abstract

At the University of Central Florida, a team of faculty and students from Digital Media and other disciplines are exploring novel forms of interactivity built around *interactive performance*. They are using digital media both to produce essential elements of the performance, and to capture and analyze the resulting experience. This paper describes one such experiment that involved over a hundred people and had a substantial impact on the future of the media arts in Central Florida.

In July of 2005, a team of 25 actors, 48 “extras” and 30 support personnel conducted a four-day experiment in interactive performance that took place across the Orlando, Florida metro area. A guest (“spect-actor”) played the role of protagonist in a complex intrigue-mystery story. The main plot and story arc were pre-planned, but much of the story’s detail was created as the performance took place. Hidden cameras and microphones recorded the spect-actor’s interactions with the cast, as he discovered and created elements of the story.

Results of the experiment are contributing to the development of the new academic discipline of *Interactive Performance*, which combines elements of theatrical improvisation, role playing games and digital media. Interactive Performance provides a theoretical basis and experimental framework for studies of new forms of technology-enhanced play and learning, such as video games. Details can be read in (Wirth 2005).

Role Playing and Interactive Performance

Improvisational theatre has a long history, ranging back at least to *commedia dell’arte*, an entertainment form popular in Italy from the sixteenth through eighteenth century (Mantzius 1970). Central to *commedia dell’arte* was the presentation of plays built around conventional situations, with improvised dialogue. Plays could be shaped to respond to local events and interests.

Modern improvisational theater (“improv”) grew from theatre games developed by Spolin and Johnstone in the 1950’s (Spolin 1999; Johnstone 1979, 1999) and “long form” improvisational structures developed by Del Close in the 1980’s (Halpern 1994). Trained actors create the story as they perform it, often building the story on the basis of an initial idea or suggestion from the audience.

Interactive performance (IP) denotes a distinguished form of improvisational theater, in which audience members are expected to play more or less active roles in the story. Trained *inter-actors* create the story and involve audience members in various ways. IP can involve large or small audiences, elaborate or simple environments (costumes, sets), and various degrees of story preparation.

Environmental Interactive Performance is defined by its use of fictional interactive story played in the context of real-time and real environments. In environmental, a church is a church, a scene happening at night really happens at night, and it takes 60 minutes for an hour to pass. A commercial dinner-theater version of this form of IP is represented by *Tony and Tina's Wedding* (Corcoran 2005).

In **Theatrical Interactive Performance**, theatrical artifice and the suspension of disbelief are used to create a sense of location and time. A chair "becomes" a throne, a scene happens at noon because we say it does, and a decade passes in a shift of the lights.

A personalized form of interactive performance can be referred to as "*participant as protagonist interactive performance (PPIP)*". Two of its principal characteristics are these:

- 1) the role of the protagonist is played by a *spect-actor* – that is, an untrained participant who does not know how the story will develop, and who may have never been involved in interactive performance before; and
- 2) performances may, and often do, involve no audience other than the spect-actor.

PPIP places individuals at the center of the stories, giving them a substantial ability to impact the course of the experience. The spect-actor is in the driver's seat, not the passenger's seat, or worse yet, in the back seat of the story.

The training of inter-actors for PPIP resembles that of improvisational performers, with additional focus on teaching inter-actors how to support, guide, and read and evoke behaviors of the spect-actor. For instance, improv is built around *offers* – opportunities provided by one actor, for another to create the next element of the story. Offers must be especially carefully constructed for spect-actors, who have not been trained to accept them – and who may inadvertently block, rather than accept an offer. Books by Jeff Wirth (Wirth 1994) and Gary Izzo (Izzo 1998) provide guidance in training inter-actors and working with spect-actors. Wirth has created the Interactive Performance Lab (iPLAY 2005) at UCF to further explore interactive performance.

IP and Role-Playing Games. There is a superficial resemblance between IP and a role-playing game (RPG) such as Dungeons and Dragons. In an RPG, one designated participant is the Dungeon Master (DM), who establishes the universe of discourse, and in effect acts as God. The DM feeds story elements to the players, and improvises the environment's response to actions by the players. RPGs can prove very engaging, and have consumed countless hours of players' time. Newer RPGs based on computer games

played through networks (e. g. Everquest (Sony 1999)) are denoted as Massively Multiplayer Online RPGs (MMORPGS) and are rapidly growing in popularity.

RPG players are seldom trained, and there is no distinction between inter-actors and spect-actor, except for the DM. RPGs place much more emphasis on the complexities of the story (which may last for hours), and less emphasis on the emotional state and experience of the spect-actor, than IP. Nevertheless, RPGs and IP are likely to be the focus of a common body of research as their popularity continues to grow.

Applications of Intimate Interactive Performance.

Training is a domain in which IP is being explored for several possible applications. Pilot experiments were conducted at UCF in 2005 with Alzheimer's patients' caregivers, to explore their learning about what life would be as their patient/relative's condition gradually deteriorates. Experiments have also been conducted to evaluate the usefulness of IP by campus police to modify the behavior of students charged with minor infractions, and to explore the use of IP in training high level military decision-makers.

Rapid Script Development was the subject of IP experiments in 2004. The UCF Media Convergence Laboratory (Stapleton 2005) was developing scenarios for use in Mixed Reality simulation, and discovered that IP could be used to develop in less than a day, scripts for interactive scenarios that would otherwise have required weeks to prepare.

Interactive Radio Theater (IRT) is an experiment currently underway. A cast of three female and three male professional audio talents from the radio industry was given basic IP training, using the studios of UCF's campus radio station. Call-in guests interacted via telephone and served as spect-actors in the development of brief dramas in three acts. An on-the-air performance of IRT is planned for the spring of 2006.

Simu-life is a term introduced by Jeff Wirth to denote the creation of an intimate environmental interactive performance that places fictional stories in real-world environments. This form can occur across an extended interval of time (perhaps several days) with inter-actors and spect-actor(s) moving freely through an entire community. A form of simu-life served as the basis for the plot of a major Hollywood film starring Michael Douglas, *The Game* (Fincher 1997).

The Orlando Game

In May and June of 2005, the first full-scale experimental Simu-life exercise was carried out. The project was directed by veteran interactive performer and UCF Digital Media faculty member Jeff Wirth, and produced by recent UCF¹ Digital Media graduate Kenneth Ingraham. The remainder of this paper describes the project and its outcomes.

Motivation. Wirth's impetus for creating The Orlando Game was a desire to see what would happen when interactive performance is taken outside of the controlled

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environments of theatrical stages and the StoryBox laboratory (see Wirth 2005) and placed in real-world settings. The concept for The Orlando Game was that a non-actor participant would live as the central character in a fictional story that would take place all around the city of Orlando over the course of four days.

Care was taken that the spect-actor should always be able to distinguish story elements from real life. The Fincher movie *The Game* was built around the premise that the framing between game and not-game was ambiguous to the spect-actor (and was ultimately broken). In our project we intended to strictly avoid this possibility.

Objectives. Our experimental goals focused on the creation and testing of techniques for guiding the story's development and digitally capturing the results. The ultimate measure of success is the degree to which the spect-actor enjoys and values the experience.

Story Structure. The story line was developed and scripted in detail; the script is Appendix A of (Wirth 2005). However, individual lines and actions were to be improvised as the story developed. In Wirth's words, "The script is a Jello mold; it provides the overall shape. The actors put in whatever fruit and whatever flavor of Jello they like."

The Story. We intentionally designed the story to be one that would draw the participant through the narrative with an obvious objective. The choice of a mystery style experience seemed appropriate because, by its very nature, a mystery guides the protagonist step-by-step with each clue leading to the next. By relying on this "chain-link" narrative form, we were freed to focus our attention on issues such as logistics, communications and the covert capture of audio and video imagery.

The Spect-Actor. Because the story was themed around intrigue/adventure and driven by the quest to rescue a kidnapped love interest, we framed the protagonist to be a male in his 30s. We were interested in seeing the protagonist's role be assumed by a non-actor, and so it was important that the participant not have a theatrical or performance background. Kurt Bauerle, a mid-30's unmarried Orlando attorney, agreed to participate. He understood that there was a degree to which the story and experience needed to go unexplained in order for it to unfold during the participatory process.

Containment of the Orlando Game. The spect-actor was given a series of four days to clear on his calendar, keeping open the lunchtime and evening times for participation in The Game. The production team made it clear to Bauerle that the fictional world experiences of The Game would take place only during specific times that would not intrude into his professional life. This premise was violated only once during the game.

Development of the Support System

The technical background for the Orlando Game included several elements:

- Website of the fictional *Rosetta Corporation*

- Wireless microphone support system
- Hidden video camera surveillance system
- Simulated image processing laboratory
- Production and projection of the “*red-handed murder*” video

Rosetta Corporation Website. This website at <http://www.rosetta-corp.com> was prepared by Digital Media students. Its role in the story was to reveal to the spect-actor some key elements of his character’s back story. The specific nature of this ‘front business’ was provided by the spect-actor during early interactions in the game. He was asked what his line of work was, in character. The Digital Media rapid-development team then built out the website within 24 hours during the early hours of the game, so that it was ready by the time the spect-actor was given the URL.

Figure 1: Web-Site for Fictitious "Rosetta Corporation"

Once the user logs into the “Members only” section of the website, a science-fiction style “rabbit hole” opens to admit the viewer to a hidden portal into the corporate records system. After a Flash-simulated ‘hacking’ of the site, the protagonist discovers that the antagonist is implicated in the rigging of electronic elections, and (as the story develops) is working to manipulate the 2008 American presidential election.

Wireless microphone support system. In order for the production team to track the development of the story, all inter-actors who had close contact with the spect-actor were equipped with concealed wireless microphones. These units had a range of several hundred yards, which meant that the support crew had to remain fairly close by in order to record and respond appropriately to the flow of events.

Hidden Camera Video Surveillance System. In a fashion reminiscent of “The Truman Show” (Weir 1998), small wireless surveillance cameras were located at various points where the action was expected to lead. In some scenes such as the “gala”, videotaping was underway as a natural part of the story line. In other scenes, taping was covert. The video footage gathered was edited into an 80 minute summary of the game’s action

International Phone Call. At a certain point in the story, the protagonist had to telephone a number in Scotland to get an essential cue. Two iPLAY students were spending a semester in Scotland, and so were recruited into the story. Their local phone number in Edinburgh was provided to the spect-actor as a story element. This element worked smoothly in the actual game, expanding the scope because he knew he was calling overseas.

Simulated Image Processing Laboratory. At one point in the plot, it was necessary to help the spect-actor discover that a character seen at a distance was not, in fact, the ‘abducted love-interest’ character “Max”. One of the characters (inter-actors) who had been accompanying the spect-actor at this point, had taken a photograph from a distance of the mysterious female character. The spect-actor was informed that “The Professor”, an image processing expert, could enhance the image so as to help them identify the

character. When they arrived at The Professor's house, they discovered that she was a twelve year old girl, a super-geek who had learned how to operate her father's computer and had developed elaborate image processing systems. With great aplomb, our twelve year old actress led the spect-actor through a Flash animation that simulated the image enhancement process.

Figure 2: Simulated Image Processing System For Forensic Analysis of Photograph

The Murder Video. At the climax to the story, a RAM stick (supposedly hidden in the antique Dornier Egg) is liberated by the spect-actor's smashing the egg. It is then inserted into a projector during the "Man of the Year" ceremonies, revealing the antagonist in the process of murdering someone. In fact the video was already cued up on a laptop computer, and the RAM stick was merely a prop.

Execution. During the actual preparation and running of the scenario, the technical support staff was fully engaged. The team breakdown was as follows:

- Art direction (6 people): Props, special effects, hair/makeup, costumes
- Web (10 people): *a priori* preparation, rapid development of Rosetta site
- Technical coord. (4 people): transportation, communications, safety and legal
- Locations coordination (4 people): scouting locations and securing permissions
- Information capture (6 people): video, audio and still photography.

Technology In Action

Audio Recording. At several points during the game, the spect-actor reacted differently than anticipated. The inter-actors were able, on each occasion, to intervene by providing a character who had the necessary information or evoked the necessary revelation by the spect-actor, to carry the story line forward. The wireless microphone system was essential to this on-the-fly corrective process. Its range was approximately 100 yards if unobstructed, which required that elements of the logistical support team be located close by the site of each scene in the story.

During testing, we experimented with different microphone techniques. We placed digital voice recorders on inter-actors when they couldn't be in range of the capture team, such as car rides. Another idea was to use cell phones to circumvent the range issues. Eventually, we found that cell phone signals produce a great deal of interference for the traditional wireless mics if used at the same time. But the idea of using cell-phones was ultimately used in another circumstance. When the antagonist had the spect's buddy killed, the killer used his cell phone as a means to deliver to the spect the sound of the murder as it happened.

Visual Imagery. The acquisition of visual imagery was a continual challenge. On some occasions such as the "high school reunion", there was a natural place for someone to be taking photos and video. On other occasions, small cameras were placed in the location before the spect-actor arrived, or were carried on the body of an inter-actor.

In most sedentary scenes, video cameras were hidden. When the action was moving, still frame imagery was usually taken covertly. There were a couple of scenes in which cameras were quite obvious and explained by the story itself. During the “inner sanctum,” the scene in which the antagonist’s true self is revealed, the character’s paranoia makes it logical for him to have a surveillance system in place. Later, at the “gala” the same character’s narcissism was the excuse for him to have a film crew there to capture his being honored by the attendees.

We also filmed people on the other end of a cell phone conversation with the spect, using the capture capabilities of the phone itself as a recorder for the spect’s audio side of the conversation.

Finally, while the spect-actor was using his computer to hack into the website, we had the program “SnagIt” running on our end of the mirror system to capture his navigation and key strokes.

Caught in the Act. On one occasion, a photographer was caught flat-footed, taking pictures of the spect-actor interacting with an inter-actor. The spect-actor spotted him as he rose from behind a bush during the “date” scene and mentioned it to the inter-actor playing the love interest in the scene. Later, the photographer’s presence was justified in the story as evidence of the antagonist’s surveillance. From that point on, this photographer became a character in the story, adding a twisted, voyeuristic side to the antagonist’s character.

Lessons Learned

After the fact, Bauerle said that a key element to his willingness to participate was the reassurance that he would not be made “to look like an idiot” in the experience. He, like most people, associated live interactive experiences with the “gotcha” shows like *Candid Camera* and *Punk’d*, or the numerous reality television programs that build much of their entertainment value on seeing participants drop their guards and reveal the private, not so pleasant aspects of their personalities. Once he was assured that his experience would be based upon his empowerment rather than his victimization, Mr. Bauerle was ready to sign on for the experience.

Realizing that the first real world setting for this form would present a host of logistical challenges, certain areas of production were given priority over others. The art department was the most expansive, including an entire web contingent. At the heart of our philosophy was the idea of improvisation based on spect-actor contribution. Props needed to have depth beyond those normally used in film production. These items had to pass simple and sometimes close scrutiny because they could be held in the audience’s hands.

An example of a near-failure in the management of prop depth-in-detail was when the spect-actor refused to give up a briefcase we only anticipated him keeping for a short

while. This allowed him the chance to inspect the CDs inside closely. Had he done so, the content on them would have hurt the consistency of the rest of the story. Fortunately, he didn't see the need to study the contents that much.

For the web component, we asked the spect-actor to provide the type of business the website would serve in the first scene of the story. To fulfill this, we needed the website to be built from a series of templates that were developed ahead of time that would not just contain dummy text, but real content that could be modified easily and plugged in at the last moment, based on whatever industry the spect-actor mentioned.

There were instances where story helped to excuse the nature of props. We had an *objet d'art* that served as both an artifact in the text of the story and as the repository of evidence for the conclusion. In the final scene, this object was to be smashed. Working with practically no budget and assuming the preordained destruction of this item, we decided to make the object an ostrich egg that had supposed historical significance. That established the challenge to decorate this egg so as to look like a hand-crafted, valuable antique. The inter-actors then had to support the object's putative value through their actions.

The Capture department had two objectives. The first was to provide live feed of the story to the "war room" in which the director and performers not on stage were waiting. The second was to preserve for posterity and the spect-actor a record of the experience. However, foremost in our minds was not to break the "reality" of the story for the spect-actor. So it was decided that if getting the shot meant drawing attention to the Capture crew, we would err on the side of not getting coverage.

Through the preparation and execution of the game, we developed a base of knowledge that will serve future iterations of this work. We built a prop arsenal, a series of website templates, a list of locations, and learned what could and could not be done in terms of capture.

Possible Future Work

This mystery-based story had a foregone conclusion. The next step would be a less "clue driven narrative," one that would, by nature, be a more open-ended story, allowing the spect-actor to be the architect of the conclusion. This structure will make the job of the crew and cast that much harder, in order to incorporate unanticipated spect-actor contributions. We expect to need more robust and extensive media technology for the second Orlando Game.

One of the purposes of having the gala was to involve real-world members of the Orlando arts community in the performance. An outcome of this strategy was that the managers of *NextArt 2006*, an element of the Orlando Film Festival for 2006, have agreed to sponsor a simu-life project that will serve as a centerpiece of the NextArt exhibition/activity, in April 2006. Planning is already underway.

One challenge that may arise during NextArt 2006 will be the involvement of multiple spect-actors. What happens when two or more people who are not trained in interactive performance begin to play with each other? Can they be supported so that the stories still hold dramatic tension? How much of interactive storytelling can be developed in the moment through immersion in fiction without the benefit of planning and training?

We expect to consider new media related issues because of the Game's interaction with the NextArt Festival. Should we arrange for live video and feedback to the festival venue? How about GPS tracking of the spect-actors. Clearly, the fun has only just begun.

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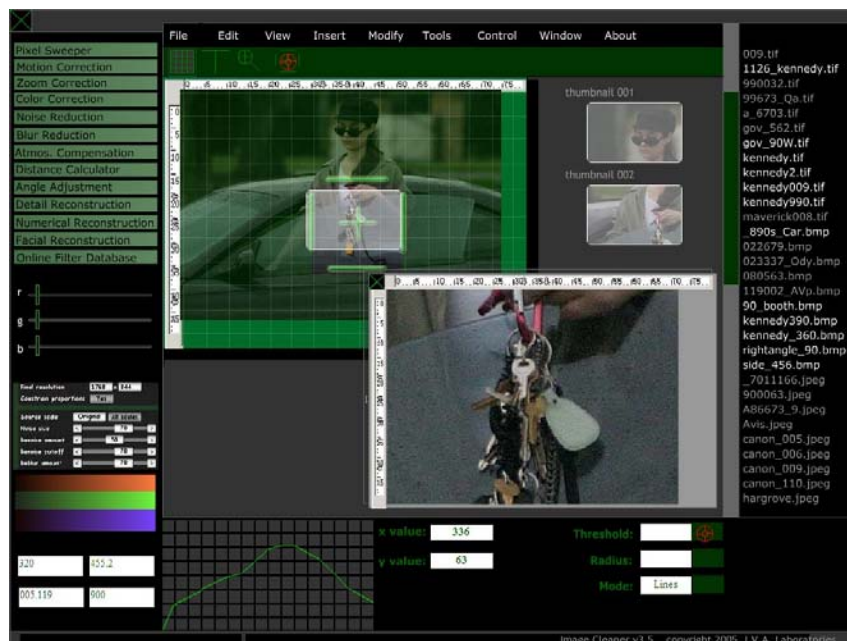


Figure 2: Simulated Image Processing System For Forensic Analysis of Photograph