

DESCENT TO THE UNDERWORLD: NETWORKED CREATIVE COLLABORATION

Development of a Game-Film
A case study in online videoconferencing
collaboration



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Overview.

Descent to the Underworld is the story about the transformation of an ancient myth into a high-tech, highly experimental collaboration. It brought together sixty-five students in three countries and five states, via the Internet2 networks and the Access Grid, to create short films for a videogame.

The story of a journey to the underworld has been told by many people, over thousands of years, in countries all over the world. This project is an updated, multi-cultural version of that story. Demeter's search has morphed into a car chase, the River Styx is rendered in CGI and Orpheus' lyre is now an i-pod, but the story remains the same.

The narrative for *this* version of the myth unfolds with the framework of a game-film. A game-film is a videogame wherein the game play results in the acquisition of pieces of a film, instead of health or points. At the end of the game, the film clips are automatically compiled and streamed, to give the player a narrative version of the choices made in the game. In the *Descent* project, the film clips were created by the teams of university students.

The idea for the game-film evolved from the work I've been doing in web cinema over the past few years. I've worked with live, networked web narratives and was originally going to do another version of that, over the Internet2. But the language of storytelling is delivered, more and more, via games instead of film. So, I thought it would be an interesting experiment to blend the two and combine games and films. The *Descent* game is a beta of that idea.

There are two aspects of the *Descent* project: one is the game program itself. The second is the collaboration among the universities around the world for the purpose of creating the films for the game. Today I'm going to discuss the collaborative part of the *Descent* project, the technology that underpinned it, and finally, the game-film itself.

Technology

Let's start with the technology, without which there wouldn't have been a collaboration. We used multiple Internet2 partner networks: Internet2 is an R&D consortium of universities and corporations around the world and the backbone net enables super-fast

speeds. As you can see on this slide, the five American universities were connected via the Abilene network. The schools in South America, China and Europe came in via CERN, CERNET and ANSP, which are international Internet2 partner nets.

For communication, we used Access Grid video technology. Access Grid is an open source, large display video program that was developed by the Futures Lab at Argonne National Labs. The technology allows you to create multiple, large windows – up to wall size screens – giving collaboration an immersive feel. It requires a dedicated server, referred to as a venue server, and the one we used was the Apple X-serve. The Apple server was located at MAPGI – the mid Atlantic Internet2 interface - at the University of Pennsylvania, and the AG node there was managed by Penn Video Networks. Their video production background was a real asset in producing the AG communications, and I'll touch on that later.

This was the first time Access Grid ran on Apple servers, and because of that, some of the AG features were not compatible with Apple technology...so we had to be creative. For instance, we could not use the recording feature of AG to capture the class sessions, so Penn Video experimented until they decided to set up the AG node on Macs, and run an S-video line out to a mini-DV deck, to capture the class sessions.

Access Grid produces great results but it can be a challenge to set up. We lost 2 schools because they became frustrated with the process. Other schools had issues during the course of the semester – for example, many could not run multicast, so our engineer built a unicast bridge and that worked for most people. Finally, audio drop out was a not uncommon experience and many of us took to using Skype as a back-up audio technology. With a good mic, you can get great sound. Access Grid is worth the effort and I will be using it again.

Collaboration.

Because the technology was so new, any school interested in participating had to be fairly savvy technologically. In addition, they needed to field a class of digital media students capable of producing the assets within the time frame, which was mid-February to early May. I ended up with 8 schools which were grouped into four teams of two schools each. One team – LSU and Northwestern - worked on the sound effects and

sound track – and the other three teams worked on the film elements. These were the University of Washington in Seattle, which worked with Tsinghua University in Beijing; Drexel University in Philadelphia which worked with the University of Utah in Salt Lake City; and the Universidade do Vale do Rio dos Sinos in Sao Leopoldo, Brazil, which was teamed with the Faculty of Fine Arts in Prague. About three weeks into the project Prague dropped out, but Unisinos continued to work on the film and incorporated pieces of Prague into it.

The student teams met online once a week for 12 weeks to debate the interpretation of the narrative, storyboard the film clips, create production schedules and share media files. That online classroom became a very interesting Petri dish for the cross-cultural, long-distance project management.

The first challenge was trying to find a time where classes in different time zones could meet, given their different holiday schedules. Brazil was on summer vacation from mid-December until mid-February, many US universities came back in mid-January but then some left for Mardi Gras in early February and in China there were no classes in early February because of the New Year! Then of course there were time zone issues and many classes got caught in the change over from standard daylight time to daylight savings time – which of course occurs in different months in different countries!

Because of the differences in time zones and cultures, the out of class communications became very important. Several of the teams used their Bulletin Boards quite heavily – they seemed to be able to communicate better via the Board in the beginning.

This was perhaps the most interesting to me – I had assumed that a generation raised on video technology would in fact be very comfortable using it – and it was almost the opposite. In the beginning they were kind of uncomfortable talking to each other via the screen, as I'll show you here. So the WIKI and board postings really became primary until they broke thru that 4th wall. I'm going to show you some early and late video footage of class sessions between U-Washington and Tsinghua and then between Drexel and Utah.

Class Session Videos

You can see that Seattle and Beijing each had small classes with no faculty member present, but they were relatively formal with each other and each delegated one person as a speaker.

Drexel and Utah each had very large classes and in the beginning each class pretty much let the professors handle the communication. In the end the Drexel students became very comfortable with speaking to the screens, but the Utah students didn't.

I think part of that was due to the way the class session was produced, and by that I mean the way the video looked to the students. Utah projected the Drexel images onto a wall size screen and the Utah students sat at a table about 10-15 feet away from the image. So there was no intimacy. On the Drexel end, which was actually produced by Penn Video, the AG operator set up and framed the video windows on the screen; he also placed the cameras and the screens about 3 feet away from the table, and zoomed in and out on speakers, so the students had more of a sense of interaction with the people on the screen. In essence, the online class sessions were like live television production and I would say, for anyone interested in this kind of collaboration, the production is very important.

The Games and Films

The classes began in mid-February; simultaneously we were developing the game.

Now, the idea behind the game-film program is that each decision point in the game results in the acquisition of a film clip, so that each player's film is unique and based upon the decisions made by the player during the course of the game. In addition, each time they play, players can opt to receive the film clips from a specific team, *or* players can opt to let the computer randomly assign clips from different teams at each decision point in the game so there are hundreds of variations in the films themselves.

I used myth as the framework for this first game-film because of its universality and accessibility to all cultures. The basic story of the *Descent* myth is that a loved one is taken by the ruler of the underworld, the hero must search until he finds her, successfully

negotiating several challenges along the way. Once found, the hero must win back the loved one, but he can still lose her during the return to the upper world unless he navigates successfully past the remaining obstacles. This narrative motif is found in the Greek myths of *Orpheus and Eurydice* as well as *Demeter and Persephone*. It is also occurs in the Norse myth of *Baldur*, the Egyptian story of *Ishtar*, and the Thai tale, *Krai Thong*. Other stories of an underworld journey – such as the American Indian tale of *Blue Jay* and the Celtic story of *Oisín* – tell of a hero or heroine who marries someone from the underworld and travels back and forth between the two worlds.

For the game narrative itself, I chose to work with the Orpheus and Demeter interpretations of the myth. However, I sent out information about the different interpretations to all of the universities involved with the idea they'd select or create their own interpretation.

Interestingly, and without seeing the game, they all selected the *Orpheus* motif and they all used traditional gender roles in the story and they employed similar symbols - for instance, the use of *MIST* to denote the spirit of the Underworld. Considering the number of different cultures involved, I find that pretty fascinating.

Each team had to produce 20 film clips, which we treated essentially like a database of clips. Because clips from each team had to mesh perfectly on playback with clips from other teams, we had to establish several unifying factors:

- For instance, each clip had the same soundtrack, no matter which team created it. So all of the first clips have the same soundtrack, all of the second clips have the same soundtrack, etc.
- Each clip had to be exactly 10 seconds, and each had to open and close on a medium shot for purposes of visual continuity.
- The main characters – the King, the pursuer, the person being kidnapped - had to be the same colors. So the King had to wear or be purple, the pursuer or hero was blue and the kidnapped character was white – and these colors generated much discussion about cultural meanings and symbolism!
- In addition, teams were given a short description of what needed to happen in each clip: for instance, the hero comes to the barrier between

the upper world and the underworld. What is this barrier? What does it look like? How does the hero meet the challenge and get past the barrier? What is that challenge? The teams had to answer these questions in each clip.

Again, their narrative interpretations were very similar – the barrier is a river of some sort, the underworld king lives in a cave, the guardian to the underworld is a beast or a half-man/half-beast, the battle is fought with a sword. Visually however, the styles were very different – let's take a look.

These are images of the various interpretations of the entrance to the underworld. Brazil is in the upper left hand corner and you can see they used digital photos, over which they animated various details and then output everything to shockwave. Their style is very colorful and humorous.

The Beijing-Seattle image is in the upper right. The Tsinghua students drew, by hand, the images you see here, which were then exported into Flash by U-Washington. These are beautiful images and the best part is that the Tsinghua class turned out to be not digital media majors, but engineers and they produced the most artistic renderings!

Drexel and Utah used digital video and CGI to render their version of a slightly post-modern underworld. Drexel shot the video and the Utah students created the CGI, which you see here in the lower right.

For the game itself, we used Flash and we went with an Art Deco look and feel, first because it's very stylized and as such different from the usual Flash games and second, because we were able to create more visual depth with this style. An example is here in the lower left ; when artist was composing the statues at the cave entrance, I told him to go and watch some of the old *Thin Man* movies to get a sense of 30's deco.

Before I began this project, I was a videogame novice. My exposure to games came through my kids and was pretty much limited to "Super Mario" and "Need for Speed",

which I find addicting. So I was really out of my league when I made the decision to create a game-film. I knew I could translate myth into a film, but I wasn't sure how that traditional myth narrative would work in a game. The breakthrough moment actually came when I was playing the online game of "24", from the TV show. I was driving my car in a high-speed chase and it suddenly occurred to me that Orpheus and Demeter, were they alive today, would definitely not wander the world on foot - they would hop in a car and give chase. After that, constructing the myth narrative as game-play became easy.

It was fascinating watching the students adapt the narrative, too. They had a real ease with the storyline because it was familiar to them; they were all able to speak the language of the story, even if they did not speak each other's language.

Videogames and mythology are not the first applications that spring to mind when thinking about 10 gigabit backbones in far-flung locations. Usually this kind of technology is employed for high level academic or scientific discussions. But I would suggest that the road less traveled might be the one that opens up the real possibilities of this next gen technology and takes us someplace we never thought of going.

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