

Mitologies: Medieval Labyrinth Narratives in Virtual Reality

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Abstract

Advances in technology have made it possible to create vast, rich, and architecturally intricate virtual worlds. The *Mitologies* project is an attempt to utilize this technology as a means of artistic expression and for the exploration of historical, political, musical, and visual narratives. *Mitologies* draws inspiration from a large pool of literary and artistic sources by capturing their intertwining relationships in a cinematic form, hence making connections to the strong narrative tradition of other media, such as film and literature.

Introduction

Advances in technology have made it possible to create vast, rich and intricate, architectural virtual worlds. The *Mitologies* project is an attempt to utilize this technology as a means of artistic expression and to explore historical, political, musical, and visual narratives. *Mitologies* draws inspiration from a large pool of literary and artistic sources by capturing their intertwining relationships in a cinematic form, hence making connections to the strong narrative tradition of other media, such as film and literature. *Mitologies* is the culmination of an extensive body of work, both as an art project and as a software design prototype in virtual reality.

The thematic content of *Mitologies* draws inspiration from medieval and on to contemporary literary endeavors. The work is loosely based on the Cretan myth of the Minotaur, the *Apocalypse*, or Revelations, of St. John, Dante's *Inferno*, Durer's woodcuts after the *Apocalypse*, and Borges' *Library of Babel*. Music from Wagner's *Der Ring Des Nibelungen* is used as a motif to structure the narrative. The work explores the enigmatic relationships between these sources and captures them in a mise-en-scene that is rooted in the illusionistic narrative tradition of other media.

As a design prototype in virtual reality, *Mitologies* is an artwork created for the CAVE(tm), a multi-person, room-sized virtual reality system developed at the Electronic Visualization Laboratory (EVL) of the University of Illinois at Chicago 'cite{cruz-neira}. The CAVE is a ten by ten by ten foot room constructed of three translucent walls. A rack Onyx with two Infinite Reality Engines drives the high resolution stereoscopic images which are rear-projected onto the walls and front-projected onto the floor. Light-weight LCD stereo glasses are worn to mediate the stereoscopic imagery. Attached to the glasses is a location sensor. As the viewer moves within the confines of the CAVE, the correct perspective and stereo projection of the environment are updated. This presents the user with the illusion of walking around or through virtual objects. Four speakers mounted at the top corners of the CAVE provide audio. The user interacts with the environment using the 3D wand, a simple tracked input device containing a joystick and three buttons. The wand enables navigation around the virtual world and manipulation of virtual objects within that world. *Mitologies* also runs on the CAVE's smaller, more portable cousins, the Immersadesk (tm) and Immersadesk2 (tm).

The characteristics of the above technology were taken into consideration when deciding to develop *Mitologies*. The CAVE provides an appropriate virtual reality platform mainly because of the non-intrusive nature of its hardware and the ability to provide a group experience. This is of great importance to a digital work of art as emphasis can be given on the work without worry of the technology overpowering it.

Description of the Virtual Experience

The word *Mitologies* derives from the Greek word "mitos," the thread Ariadne granted Theseus to help him find his way out of the

Cretan labyrinth. The viewer in *Mitologies* re-experiences, allegorically, the journey of Theseus, but also of another historical and literary figure, Dante Alighieri \cite{dante}. The narrative is introduced in a storytelling fashion, a structure largely unknown to virtual reality worlds, but familiar in other media, such as film and literature.

As the narrative proceeds, the integration/interaction of long and endless navigation, blurred hallucinatory landscapes and foggy passageways, accelerated and decelerated motion, sudden shifts from color to black and white, eerie Wagnerian music, bizarre and distorted decor, labyrinthine structures and parabolic style, temporal pressure and spatial discontinuities, engage the viewer in a kind of "action" plot, dramatize the journey, and fuse the overall narrative with a dream-like feel.

The audience entering the CAVE is initially located on the bank of a river, in a dark forest, an allusion to Dante's sinful forest.



Figure 1: Participants interact with *Mitologies* on an ImmersaDesk (tm) virtual reality system.

From a distance, the viewer hears the creaking sounds of a wooden boat and the subtle sound of water washing against the river banks. The boat slowly appears, led by a statue: a model of Donatello's Zuccone \cite{poeschke}. Can this be Virgil accompanying Dante into *Inferno*? As the boat approaches the shore, the viewer is swiftly transported onto it and the journey down the river begins. In the physical space of the CAVE, two benches are placed in a configuration that corresponds to the virtual seats of the boat. Hence, the illusion of traveling in the boat is realistic, as the viewers look down at the floor of the CAVE and see the virtual boat swaying beneath their feet.

The intention of this opening scene is to establish an explicit sense of a story line narrative. The slow and smooth flow of this introductory sequence is lethargic and meditative, setting the pace the work seeks to accomplish throughout. The opening river motif from Richard Wagner's opera *Das Rheingold*, used for the river scene, contributes to the impending sense of danger and heightens the expectation of the unknown yet to come. Upon closer examination of the visual and auditory metaphors, the participants may begin to recognize the elements and start drawing the connections that will guide their exploration later on. The river scene eventually fades out while the next scene, that of a brighter and more ethereal space, fades in. The transition is aided by sound, an excerpt from Richard Wagner's opening segment of *Das Rheingold*, which serves as a structural motif for the unfolding narrative. Once in this space, the viewer has disembarked from the boat and can now start using the interface device, the 3D wand, to continue the journey by navigating through a large plane. Far in the distance, a magnificent church, surrounded by horticultural maze gardens, appears.

The grand cathedral is inspired by the seven churches described in the Apocalypse: Ephesus, Smyrna, Pergamum, Thyatira, Sardis, Philadelphia, and Laodicea. In *Mitologies*, all seven of these churches are represented as this one grand church which is modeled after a Leonardo da Vinci sketch of a church that was never built \cite{busignani}. Many attempts were made in the Renaissance to build da Vinci's church but these attempts never materialized. It is for the first time that da Vinci's design can finally take shape as a 3D structure where the viewer has the opportunity to travel up high and around the intricately detailed brick domes and examine da Vinci's magnificent architectural vision.

As the doors of the church slowly open, the interior reveals the elaborate space of a completely different style of churches: the Great Mosque of Cordoba in Spain \cite{dodds}.





Figure 2: A horticultural garden maze surrounds the magnificent church, which is modeled after a Leonardo da Vinci sketch and can be experienced in *Mitologies*.

The sound motif from Wagner's Ring intensifies the sense of elevation and progression from one space to the other. The viewer has the freedom to travel inside the realistic representation of the mosque at a low level, to almost feel the carpets, or fly high up over its arches. As with the church, the textiles and ornamental details of the interior of the mosque are drawn from a variety of sources related to the model, the period, and the thematic content, but also adapted to the unfolding of the narrative. The progression is intensified further when the darker and more ornamental spaces of the mosque become the entrance to the even darker and mysterious labyrinth underneath.

In *The Metamorphoses*, Ovid notes that Daedalus built a house in which he confused the usual passages and deceived the eye with a conflicting maze of various wandering paths \cite{ovid}. In *Mitologies*, myriad strange, dark, and misleading passages are constructed to create a labyrinth reminiscent of the labyrinth built by Daedalus. The labyrinth is a web, or rhizome: every path is connected with every other one. It has no center, no periphery, and no exit because it is a potential infinite \cite{reiddoob}, \cite{santarcangeli}. As the viewers proceed through the maze, they find themselves on paths that lead to medieval curiosity rooms, rooms based on Durer's woodcuts of the Apocalypse \cite{durer}, and rooms populated by statues and icons, rooms that require that the viewer makes choices in order to proceed. In some cases, to proceed from one space to another, the viewer must make the right choices. The first room, for instance, presents the viewer with three words: "Dante," "Theseus," and "Christ." If the letter "T" in any of the words is chosen, then the door leading to the first Durer woodcut is opened. Otherwise, one of the other doors leading to further spaces is opened. At any point and depending on the choice, the participants may experience either a "woodcut" or one of the other special rooms.

Each of the woodcut rooms brings to life, in 3D, one of seven Apocalyptic woodcuts by Durer that were selected for this work. The first room encountered is the Seven Trumpets woodcut room. It presents the Book with the Seven Seals rapidly unfolding on a scroll, while the loud trumpet sounds from Wagner's *Das Rheingold* are juxtaposed; in the Apocalyptic Woman room, a female voice from *Die Walkurie* follows a woman's torso as water starts to rise, eventually flooding the room; the Four Horsemen room translates the horror of the most famous and ever popular sheet of Durer's Apocalypse with the violent motion of the horsemen, as the four-colored walls close in on the viewer; in the Opening of the 5th & 6th Seal room, multiple semi-transparent layers illustrating the lower part of the woodcut, rise from the ground like blades; the Torture of St. John, the most unusual of Durer's woodcuts that is not part of the Apocalypse narratives, is realized with a modern interpretation of torture in the four cross-like spaces of the room; finally, the woodcut room of St. Michael Fighting the Dragon, one of the last in the series of woodcut rooms, is presented with words from the Book of Daniel: "ME _NE, ME _NE, TE _KEL, U _PHAR _SYN." The first two syllables, ME _NE, mean: "God has numbered thy kingdom and finished it;" the next, TE _KEL, U _PHAR _SYN, mean: "Thou art weighed in the balances."



Figure 3: The three-dimensional model of the mosque of Cordoba in Spain, as experienced in *Mitologies*.

Other rooms in the labyrinth attempt to capture the mystery and beauty of the popular medieval curiosity rooms. The Metaphysics/Astronomy room invites the viewer to gaze at the Sistine Chapel paintings of hell through the eyepiece of a large telescope; in the Music room, the viewer can play one of four instruments and browse through the score sheets. The Insects, Geography, and Alchemy rooms resemble damp study rooms where knowledge is classified through elaborate taxonomies. In the first of these rooms, tables of insects are adapted from medieval entomology books. The Geography room displays the beauty and accuracy of medieval cartography through the numerous examples of maps, including a central terrestrial globe model representing the fundamentals of Ptolemy's geographical system. The latter room, the room of Alchemy, is saturated with the ten words of God mentioned in the Cabala.

Each of the rooms in the labyrinth involve careful research concerning the artistic content as well as the historical and political contexts they represent. The virtual implementation, however, does not attempt to perfectly recreate, interpret, or realize the contexts of these rooms, but to capture their emotional essence. This process is best illustrated through an example on one of the rooms of the labyrinth, the Bosch room, after Hieronymus Bosch. This room brings to life Bosch's most famous work, *The Garden of Earthly Delights* (1505-1510).

This triptych shows the master at his best. The central panel, which is the subject of the VR space, swarms with the frail nude figures of men and women sporting licentiously in a panoramic landscape that is studded with fantastic growths of a quasi sexual form. Bosch seems to show erotic temptation and sensual gratification as a universal disaster and the human race, as a consequence of original sin, succumbing to its naturally base disposition. The subjects are derived in part from three major sources: Medieval bestiaries, Flemish proverbs, and the then very popular dream and occult books, all mixed in the melting pot of Bosch's astoundingly inventive imagination.

We have chosen to realize this central panel for the virtual space. Symbols are scattered plentifully throughout this panel. One of the most fascinating symbols is that of a couple in a glass globe which illustrate the proverb: "Good fortune, like glass, is easily broken." The glass globe is recreated in three dimensions and recreate, also in three dimensional glass globes, what the triptych as a whole represents. First, the false paradise of the world between Eden and Hell. Second, the secrets of alchemy and its allegorical meanings. The viewer is able to enter the glass globes which reproduce the movement of the heavenly bodies. As the viewer navigates from one globe to the next, the walls gradually move backwards to reveal multiple globes, rising like air bubbles. A rather ethereal fragment from Wagner's opera, *Gotterdammerung*, is used to illustrate the overall allegory of the painting.



Figure 4: A view of the Bosch room, one of the more than 30 rooms included in the *Mitologies* world.

The constructions of the rooms include a complex web of metaphors and signs. The path from one room to the other may be linear, circular, or truly labyrinthine, depending on the viewer's choices. When the last room of the labyrinth is finally reached, the viewer's tedious journey concludes. The shape of this room resembles the number six or the shell of a snail, as do the two rooms that proceed it. The viewer enters at the narrow tip of the room and circle around it until the center is reached, where the encounter with the minotaur himself, the symbol of death, takes place. The representation of the minotaur seated in his magnificent temple is based on Cesare Ripa's death metaphor from *Iconologia* 'cite{ripa.: "The same fate awaits all; we hasten toward a common goal, black Death, who claims all under his power."

The personification of Death, a skeleton, lies on a bier within an elaborate catafalque decorated with skulls and many lamps. He is wrapped in a rich robe (he takes away the rich man's wealth) and wears a laurel crown symbolizing his rule over all mortals. In one hand he holds a sword entwined with an olive branch, meaning that peace cannot endure if men do not run the risk of death in fighting for it. The motto above the catafalque reads: "Death makes all men equal." Four lighted tapers stand on either side of the bier. "Not rank nor dignity can me withstand; My power extends o'er every land." 'cite{ripa

In the lower foreground stand two putti, heavily veiled to signify their blindness, not their mourning, for they represent man's pleasure in the things of this world. The power and glory of the world are shown in the child wearing classical armor and carrying crowns, a mitre, a scepter, and medals on a cushion, while a sword, lances, and a marshal's baton lie at his feet. The other putto represents all human invention and art; the flail and shovel lying near him stand for agriculture, while the quill pens, scrolls, palette and brushes, and compass and triangle stand for the arts and sciences. On one side of the room, a pair of white feathered wings built by Daedalus lay on the floor.

While the viewers will surely attempt to approach the minotaur, a hidden crypt opens under their feet enabling them to escape from the labyrinth by using the pair of wings. Once again, as with the beginning sequence, navigation is disabled and the viewer is dragged down into a tidal pool, while the sound excerpt from *Das Rheingold* reaches a climax. Enmeshed in a maddening spiral, where voices and sounds swirl down along with them, the virtual reality viewers have finally landed back on the boat on which the journey started out from. Only now, Donatello's statue is no longer standing on the bow of the boat. Instead, a few scattered feathers, remnants of the wings that led to the escape have replaced the monumental figure. The voice and sound motifs have also halted with only the creaking sounds of the boat breaking the silence. The narrative, that of a labyrinth but also a labyrinth in itself, has completed its cycle.

On the Use of Narrative and Interactivity

Mitologies takes a radically different approach to narrative structure and, one could say, almost ignores interactivity. In certain cases, the audience has no control, such as in the distinct opening where they are taken aboard the boat which slowly transports them to the cathedral. From this point on one participant may take control over navigation while the others experience the virtual narrative led by this person's choices. The cinematic narrative form preserves itself through the continuous slow pace and progression achieved from one scene to the other. The labyrinth presents its visitors with choices, yet all choices are in essence illusory, as they ultimately lead to the same final confrontation with the minotaur, the fall through the trap door, and the return back onto the boat, thus completing a circular journey.



Figure 5: The geography room filled with medieval maps of unique beauty and accuracy, including the *Planisphaerium sive universi totius*, a celestial chart illustrating the sun-centred system outlined by Copernicus.

Interactivity is a *raison d'être* of a virtual reality world. Most people, however, do not know or understand how to deal with interactive computer-based art, let alone with interactivity in immersive and, in many cases, complex virtual worlds. The virtual experience is disorienting, unnatural, and difficult for most, even if the technology used is as simple and natural as it currently gets. The Electronic Visualization Laboratory has been actively involved in defining the future directions of virtual reality technology through the development of the CAVE, which one can argue as being one of the better examples in the gamut of interactive virtual reality systems. Our participation in multiple venues has provided us with numerous instances to observe the reactions of people interacting in the CAVE environment, whether children, adults, single viewers, groups, expert or novice viewers. These observations lead us to believe that an interactive experience is not necessarily all that matters when creating a work of art, unless the work itself is about interactivity. Why would we necessarily need a reactive computer program in order to make an artistic statement rich in metaphor? For us, what is more important is that the viewer will not be consumed by learning how to interact with the technological interface. Furthermore, it is important for the artist that the viewer will surpass the stage of fascination with the medium, which may distract from the content of the work itself. Certainly no painter would consider her work successful if, instead of the work, the viewer became fascinated with the construction details of the canvas. It is, thus, critical for virtual reality to move beyond the level of the technology. And the mission of a work of art is to present a challenge to the prevailing orthodoxy of virtual worlds.

How do we respond to this mission of shifting the form and artistic process of virtual world creation away from the technology and into the content? It is not the intention of this work to realistically recreate architectural worlds of the past, nor to collapse time periods into an attempt to redefine them as part of a confusing, short, and fragmented experience. Although the piece involves research in history, mythology, literature, art, and music, it avoids taking a didactic or encyclopedic stance. The intention is to create a work rooted in the humanities which tries to surpass the usual form of virtual reality worlds, the form of navigation through abstract geometric shapes. Another clear intention of *Mitologies* is the attempt to impose a narrative content and structure. The film-like *mise-en-scène* was selected both for its familiarity with the viewers and as a mode of expression. Finally, the collaboration between individuals of different interests and disciplines had to meld together into a work that makes a coherent whole, avoiding what is frequently the result of collaborations for the creation of virtual worlds: a series of different, non-associated worlds connected by portals.

Conclusion

Apocalyptic literature and art have always been concerned with the approach of the end of the millennium and so does scientific and popular literature about virtual reality. As this work is created towards the end of the twentieth century, it inevitably investigates the meaning of the *Apocalypse* in such a context. For *Mitologies*, virtual reality is used as a vehicle to literally explicate the exegesis of the Revelation. In the *Apocalypse*, double perspective plays an important part in building and expanding the metaphors. On one level, the vision is severely restricted and fragmented, and suffers confusion. On a parallel level, it is clear and concise. The metaphors are at once single and double; they incorporate clarity and confusion, unity and multiplicity, artistry and chaos. Indicative is the element of the labyrinth: a symbol of the tombs of death, of hell but also a place of judgment and worship.

However complete and extensive, *Mitologies* is still intended as an experiment with the state-of-the-art in technology, but also as an attempt to see the twentieth century world from a perspective other than the technology it has been created with. Although it is left up to the viewer to synthesize the historical, literary, or mythological material into contemporary relevance, it is still the focus of this work to create an alternative to the usual fast-paced, choice-driven synthetic worlds and make a profound and lasting impact within VR in specific and technologically -based art in general. Then, *Mitologies* may be considered a successful experiment in art.

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