GAME DEVELOPING, THE D'NI WAY:
HOW MYST/URU FANS INHERITED THE CULTURAL LEGACY
OF A LOST EMPIRE

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GAME DEVELOPING, THE D'NI WAY:
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GLOSSARY OF ABBREVIATIONS AND OTHER TERMINOLOGY

AAG – Age Authors Guild – A group of fans who are involved in various aspects of the creation of new Ages.

ABM – *Uru: Ages Beyond Myst* – The initial single-player release of Uru.

AGM – All-Guilds Meeting – A monthly event in which players involved in all different types of Uru-based activities (that is, players from different "guilds") meet for discussion.

ALCUGS – A Live-Compatible Uru Game Server – unofficial fan-made Uru server software.

Cavern – Metonymically refers to the virtual story-world in which Uru takes place, because the center of activity is in the underground cavern of D'ni. See also: IC, OOC.

CWE – Cyan Worlds Engine – Game engine used for later versions of Uru, including MOUL.

DRC – D'ni Restoration Council – A fictional organization of archaeologists in the Myst story world, who are working to excavate and restore the D'ni ruins.

IC – In Character – Refers to the frame of reference in which disbelief is suspended, characters are taken at face-value and the story-world is regarded as real. This is the context in which narrative and role-playing take place. In Uru, the term is sometimes rendered as "In Cavern." See also: OOC.

IP – Intellectual Property

LTVW – Linden-Type Virtual World – A term used herein by the author to refer to Second Life as well as its open-source clones such as OSGrid (from "Linden Lab," the name of the company that created Second Life).

MMOG – Massively Multiplayer Online Game

MOSS – Myst Online Server Software – A CWE-compatible open-source server software package, distributed by the OpenUru.org project, which enables fans to run their own shards.

MOUL – *Myst Online: Uru Live* – The official name of the GameTap version of Uru.

MOULa – *Myst Online: Uru Live Again* – The current, Cyan-operated, free-to-play Uru server shard.

MOULagain – An alternate abbreviation for *Myst Online: Uru Live Again* (see MOULa).

MUDPIE – Multi-User DiRT, Personal Interactive Experience – one of the early codenames for Uru. DiRT is itself an acronym standing for "D'ni in Real Time." In some of Cyan's documents, "PIE" was said to have additional alternate meanings, such as "Persistent Interactive Environment."

NPC – Non-Player Character – An automated, scripted entity who appears in the game world as a story character, but who is not operated by another player.

OOC – Out of Character – Refers to the non-diegetic frame of reference in which the story world is regarded as fictional and characters are understood to represent actual humans who are interacting with the world through computer software. In Uru, the term is sometimes rendered as "Out of Cavern." See also: IC.

Shard – In order to manage large player populations, Massively Multiplayer Online Games are commonly divided into several separate server instances called *shards*. Each shard contains its own copy of the virtual world and there is generally no connection between shards—two player characters on two different server shards will never meet in virtual space because they inhabit two different copies of the world. In the case of Uru, individual fan-run servers are called shards because each hosts its own separate instance of the Uru world. Not all MMOGs and virtual worlds use a shard system: Second Life, for example, relies on a network of inter-communicating servers to connect all users to a single common world.

TPOTS – *The Path of the Shell* – An expansion pack for *Uru: Ages Beyond Myst* that incorporated much of the almost-finished content that Cyan had produced prior to the first cancellation of Uru.

TUC – The Uru Commons – The name of one of the neighborhood/social groups that exist in-world.

UAM – Uru Age Manager – Fan-made software that allowed players to explore fan-created Ages made using Blender with the PyPRP plugin.

UruCC – *Uru: Complete Chronicles* – A retail edition of single-player Uru content, containing the core game (*Ages Beyond Myst*) as well as both expansion packs (*To D'ni* and *The Path of the Shell*).

SUMMARY

This research considers how the culture of game developer Cyan Worlds influences the gameplay environment and the culture of fans in Myst Online: Uru Live. The game has gone through two commercial releases and in both cases it was cancelled after a short time. Fans have attempted to salvage the game by producing their own server software and content creation tools. Recently, Cyan released their own source code and development tools to the fan community, giving fans an official channel for creating new content. This work builds off of Pearce's (2009b) study of the culture of Uru players and emergent play, but adds the dimension of considering the culture of developers themselves.

A primary goal of this study was to determine how the culture of a game developer like Cyan shapes the constraints of the designed "play ecosystem" (Pearce 2009b: 7), and how it shapes the processes by which fans can salvage aspects of the game to create new content. One finding is that the design of Uru's gameplay environment is rooted in the cultural practices, personal philosophical goals and individual personality traits of its developers. Fans were able to assert ownership over the Uru story-world and the means of production of new content by proactively applying technical and problem-solving skills—the same sorts of skills that players must apply to solving puzzles in Myst games. This fan action, coupled with Cyan's goal of making an open-ended world, has helped to propel the initiative to provide open-source tools for creating new content. When fans produce new content, they draw significantly from an existing shared cultural repertoire of cues and conventions. These conventions are supported both by the software

affordances of the development environment and by cultural precedent—they are readily

adapted to Myst-like narratives and are easily "read" by experienced players.

CHAPTER 1:

INTRODUCTION

1.1 Research Questions: Understanding Producers, Fans, and Fans-as-Producers

The purpose of this study was to investigate the relationship between game

developers and fans in the curious case of *Myst: Uru* (Cyan Worlds, 2003), a multiplayer

online game that was a commercial failure, yet remains a living world with a devoted

following *and* a culture of amateur production of new content. This paper examines the

culture of Cyan Worlds as a game developer and draws comparisons with the culture of

players and fans, with particular focus on how this cultural background informs the

creative/productive behaviors of fan groups who have taken it upon themselves to add

new content to the Uru story-world. The analysis that follows centers on four main

questions:

- What can the case of Cyan and Uru teach us about how the culture of a game
  developer shapes the constraints of the designed "play ecosystem" (Pearce 2009b: 7),
  and how it affects the culture of fans?

- What processes do fans employ in the creative production of new content? What
  conventions and processes do they borrow from the original developers and what do
  they do differently?

- What sort of conflicts can arise, between fans and developers or among fan groups, as
  the players move to create their own content and establish their own modes of
  production?

- What strategies are fans able to employ to assert ownership over the story-world they inhabit, and to what degree are they successful?

1.2 Background: Myst and Uru Live

Uru is a multiplayer spinoff from the hugely popular *Myst* CD-ROM puzzle-adventure game (Cyan Worlds, 1993). The fiction of the Myst universe centers on the lost civilization of the cavern-dwelling D'ni, a people who disappeared hundreds of years ago, leaving behind a vast and empty underground city, deep beneath the Earth's surface. More importantly, the D'ni were keepers of "the Art" of writing "Ages." They wrote books which could, by describing the characteristics of another world in rich detail, establish a portal (a "link") which a living person could cross to travel between that new world and our own. These other worlds were called Ages, and the books providing the portals were referred to as "linking books."

The linking book itself is probably the most easily recognizable icon associated with Myst. In the very first scene the original *Myst* game, the player is presented with a view of a book, opened to a page featuring an image of a seaside dock on an island. The player character begins the adventure by touching this image (a "linking panel") to be teleported into the world where the island exists as physical reality.
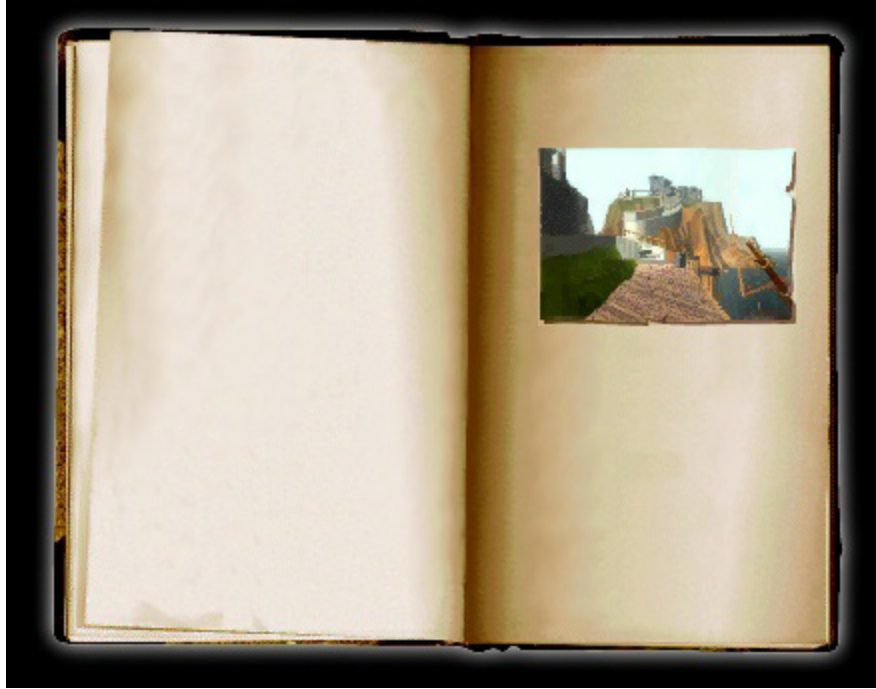
Figure 1. The open linking book, displaying the linking panel on the right-hand side, from Myst: Masterpiece Edition. When the player clicks on the panel, s/he is teleported into the world pictured therein. *Source: Screenshot by the author.*

The story of the D'ni is told in six computer games and three novels. The entire series, and the story-world it encompasses, is usually referred to collectively as "Myst," a situation that may lead to some confusion as the word "Myst" may also refer specifically to the original 1993 game. "Myst" is also the name of the island that serves as the setting for the first game's story. Despite the fact that Myst Island rarely appears in any of the other five games or in the novels, the whole saga is usually metonymically called "Myst."[1]

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[1] To avoid ambiguity, I will observe the following conventions herein: *Myst*, when italicized, refers to the 1993 CD-ROM game; Myst Island is a geophysical location in the game world; Ages of Myst are other island worlds that the player explores in the original *Myst* game; otherwise, "Myst" refers to the entire series and story world in general (including *Uru*). References to the "offline" or "single-player" games distinguishes the Myst product line (*Myst*, *Riven*, Mysts III, IV, V) from *Uru*, which is a spin-off. (The single-player version of *Uru* will be referred to specifically as such, and will not grouped together with these other titles under the category of "offline" Myst games, since it was not originally designed as a single-player experience.)

The main Myst storyline follows a nameless, faceless protagonist, known only as "the Stranger," who finds himself transported into this strange universe through the pages of a linking book. It appears that he has unwittingly walked in on a family feud as Atrus, the proprietor of Myst Island and writer of Ages, is beset with crises resulting from the greed and insanity of his megalomaniacal father and his two wayward sons. From one game to the next, the Stranger helps Atrus put things to right.

Uru, which is of primary concern here, expands on the Myst storyline but is considered by its developer, Cyan Worlds, to be a spin-off—not part of the Myst "series," because its narrative and subject matter are framed differently. While the Myst product line games are set in some nonspecific time and place, *Uru* is immediate: it takes place in the modern day, in the D'ni Cavern which is right here on Earth (IGN Entertainment 2006). The story tells that in 1987, archaeologists discovered a network of caves under Eddy County, New Mexico, leading to the vast and abandoned underground city of D'ni. Recently, the D'ni Restoration Council (DRC)—the organization of archaeologists responsible for the excavation—has allowed casual explorers to visit the Cavern and explore some of the Ages that have been recovered. The connection to the earlier story is that Atrus, though born on the surface, is the descendant of D'ni refugees who fled the Cavern as the empire fell to ruin. Atrus later returned to the Cavern, learned the Art, and began searching for D'ni survivors through the many Ages whose linking books had not been destroyed. Atrus himself is absent from *Uru*, his time having long since passed, but his mysterious adult daughter Yeesha appears from time to time in the Cavern, and seems to have sporadic contact with explorers and the DRC.

While the protagonist of the Myst line is the nameless, faceless "Stranger" whose identity and backstory are never revealed, *Uru* casts the player him/herself into the character role of a modern-day explorer visiting the ruins of D'ni. Tutorial videos for *Uru* pushed this view by suggesting that the name itself had a double meaning: "Uru" comes from the Sumerian word for "city" but can also be interpreted as "U-R-U" ("you are you"). *Uru* is also the first Myst game in which the player gets a third-person view of his/her avatar and can customize his/her appearance (previous Myst games used only first-person perspective).

1.2.1 Chronology of Uru

This research considers the relationship between *Uru*'s creators and its fans, and also the relationship of both creators and fans to the artifact itself. However, *Uru* must be understood as situated within a context that includes the other Myst games as well as the novels. Moreover, the name "Uru" does not refer to one specific artifact, as multiple, substantially different incarnations of the game fell under this name. It helps to have an understanding of the significance of each of these incarnations. The multiple deaths and rebirths of Uru, as well as the migration of players from Uru to other virtual worlds (like Second Life and There.com) and back again is documented in detail by Pearce (2009b). The chronicle given here focuses on events of significance to the later discussion of Cyan's design process and game development by fans.

The project that would become *Uru* was originally codenamed MUDPIE, which in turn had been derived from the acronym DiRT, for D'ni in Real Time. MUDPIE, then, stood for Multi-User DiRT Personal Interactive Experience—or any of multiple variations that switched in other words, such as "Environment" instead of "Experience,"

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or "Persistent" in place of "Personal." The first working title for the game was *Parable*, which implies a symbolic story with instructional intent—or a morality play of sorts. Although Cyan never released a game under the name "Parable," the early title choice remains thematically significant, as will be seen in Chapter 2.

One source of confusion for those unfamiliar with *Uru* is that there are online versions and offline (single-player) versions. Cyan always intended *Uru* to be an online virtual world, but their publisher, Ubisoft, pushed to have a single-player version produced as well.

The first incarnation was *Uru Live Beta*, which was an invite-only online game, active in late 2003. The single-player version, *Uru: Ages Beyond Myst* (ABM) was released in November 2003 and sold in retail stores. ABM consisted of four Ages that the player could visit, sometimes called "journeys"—a name given to them by the enigmatic non-player character (NPC) Yeesha. The goal for each of these journeys was to locate and activate seven "journey cloths" left by Yeesha in each Age. ABM also included the Cleft—which was Atrus's childhood abode in the New Mexico desert—and the player's personal Relto, which contains his/her library of linking books. ABM contained the client code to connect to Uru Live, but access to the server was limited.

Figure 2. A journey cloth: the main task in ABM was for the player to find and touch (click) all of the journey cloths in each Age. *Source: Screenshot by the author.*
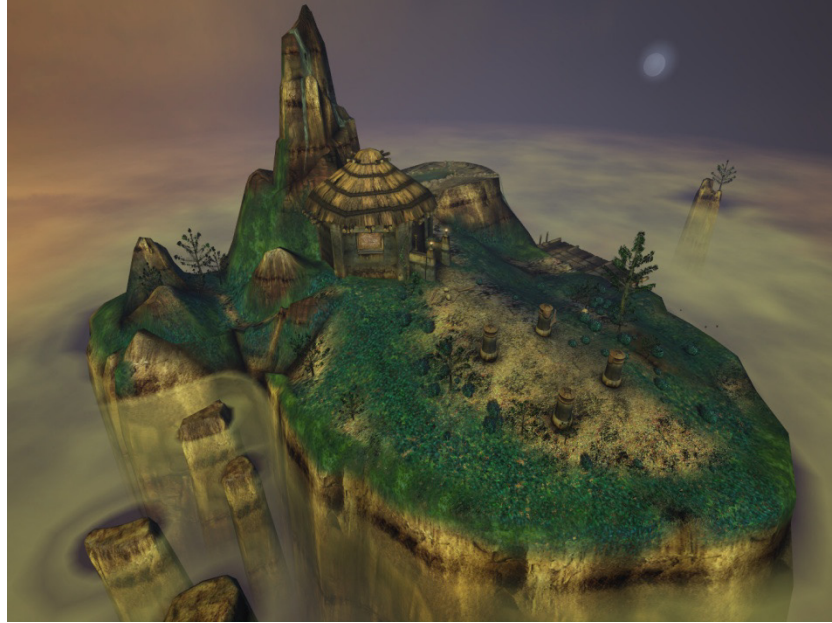
Figure 3. Relto, the player's personal home Age and refuge in *Uru*. *Source: Screenshot by the author.*

Figure 4. The player's personal library of linking books, found inside the Relto hut. *Source: Screenshot by the author.*

After ABM was released, Uru Live Beta transitioned into *Uru: Prologue*, the

game's public seed[2]. Players who had purchased ABM could register accounts and apply

to join the online play in Prologue, but Cyan granted these access requests in small

batches, leaving most players on the waiting list. This is consistent with Cyan's plans as

outlined in early *Parable* design documents. Prologue functioned on a narrative level as

the literal prologue of a story: it was used to kick off the storyline by establishing the

setting and initial events. It was also a prologue in that it was slated to take place before

the grand opening to the general public. Cyan wanted to open the cavern a little bit at a

time in order to manage the potentially unexpected. For one, there were serious technical

issues such as lag—a problem that would only be compounded by letting more players in.

Prologue was also to be a proving ground for the design of the game itself itself—the

gameplay, the environment, the social affordances. In many ways, the designers

considered the game experimental, so by admitting new players in small batches, they

could better observe how those players reacted to the environment, and thus fine-tune the

game. The notion of gradually opening portions of the cavern to small groups of

explorers is consistent with the general operating procedure of the D'ni Restoration

Council. In-game materials explain that the DRC must inspect new Ages and new areas

in the cavern to ensure that they are safe, before allowing explorers to travel there.

In terms of content, Prologue included the core Journeys from ABM and made

them available for multiplayer cooperative exploration. It also added parts of the D'ni

cavern—the City (also called *Ae'Gura*[3]) and several residential neighborhoods where

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[2] For a diagram and table showing the different game versions, with dates, see Figure 5 (page 13) and Table 1 on (page 14).

[3] Although commonly referred to as "the City," Ae'Gura is actually just the central downtown core of a much larger urbanized area that spreads throughout the cavern, several miles in every direction.

players could explore in groups. Under the original plan, according to Cyan's design documents, Prologue was to evolve into Season One, during which the cavern would be open to the general public, new areas would be added to the game, and new story events would occur. Before that could happen, Ubisoft pulled funding for Uru, forcing Cyan to shut it down.

Shortly before the cancellation, as a result of what would later be termed a "clerical error," Ubisoft accidentally sent account activations for all of the thousands of users on the waiting list. This was a fateful move, as the fact that these multitudes were able to enter Uru during its final weeks certainly shaped the future course of actions in the fan community. If they had never had the opportunity to enter Uru in the first place, they might not have fought so hard to keep the game community alive.

Prologue was shut down in February 2004, but Cyan tried to make the most of the situation by providing as much content as they could through the offline version. Much content had already been planned and designed for inclusion in Uru. In April 2004, the City/Cavern areas were distributed as a free downloadable expansion pack to ABM (called *To D'ni*), while entirely new Ages were added with The Path of the Shell (TPOTS) expansion pack, which was sold in stores later that summer. Cyan/Ubisoft later published a complete release of all the offline content, including ABM, POTS and *To D'ni* in one volume called Uru: Complete Chronicles (UruCC).

Cyan founder and president Rand Miller makes it clear that the offline version was never part of the original plan, and this is doubly true of POTS. Some of the Ages in the online versions of Uru are meant for shared exploration, and contain puzzles that can only be solved through the cooperation of multiple players. "The offline version […] was

just a compromise," Rand explains, "I mean, we had to shoehorn Uru into that to make it work." However, the existence of an offline version has been leveraged by fans as a functional base on which to build customized content and run unofficial private servers.

Until Uru was Cyan's first attempt to resurrect the game. While they were not in a position to maintain, support and bankroll an MMOG—much less add new content—they allowed the fan community to provide itself with ongoing access to the game. Fan groups were provided with the binaries to run their own server shards, and individual fans could purchase "Kagi keys" giving them access to these shards.

By 2006, Cyan had plans for a revived commercial release of Uru with a new publisher. In preparation, they set up their own Until Uru shard, called D'mala, for what one player describes as a "soak test." Cyan stopped providing new Kagi keys for the fan-run shards and interest in those dwindled as D'mala garnered increasing attention (Washburne N.d.). This eventually led to the official public release of *Myst Online: Uru Live* (MOUL), published and sponsored by GameTap, a new subscription-based gaming service owned by Turner Broadcasting. MOUL also included updates to the game engine itself, thus establishing a new generation of client software (Cyan Worlds Engine, or CWE) that differed from the previous POTS/UruCC-based clients. GameTap's Uru lasted almost two years, through an entire "season" of content, but GameTap cancelled the project in the spring of 2008.

Shortly thereafter, Cyan took steps to put Uru into the hands of the fan community, announcing their intention to release source code as part of an initiative they called Myst Online Restoration Experiment (MORE). In 2010, they opened a new server, calling it *Myst Online: Uru Live Again* (MOULa). MOULa allows players to explore the

game world as it was just before GameTap closed it down. The game is free to play but Cyan provides no support or new content, and relies on donations from fans to offset operating costs. At the time of writing, Cyan has made source code for CWE publicly available, while an independent fan project has developed open-source CWE-compatible Myst Online Server Software (MOSS). The development of new content is now in the hands of fans.

There are two aspects to what I term "fan content": on the one hand, fan content concerns virtual spaces, stories and (especially) new Ages created by fans; on the other hand, it also concerns how fans maintain virtual spaces – such as "refugee" groups in other virtual worlds or fan-operated versions of Uru software – for meeting and interaction. For clarity's sake, I identify three "generations" of fan content, with the caveat that the boundaries from one generation to the next are blurry and indistinct (see Figure 5b). The first generation, which is detailed in Pearce's *Communities of Play* (2009b), encompasses fan activity following the cancellation of *Prologue*, through the *Until Uru* era and up to the launch of GameTap's MOUL. The second generation includes the ALCUGS home-grown server software – compatible with POTS-based clients – and the fan-developed PyPRP plugin that enabled Age-building using Blender, a 3D graphics editing program. Although these projects began prior to the GameTap era, development was largely halted due to licensing concerns as Cyan began negotiations with GameTap for a relaunch. The second generation tools did not truly come of age until after the demise of MOUL left fans once again without access to the Cavern and with the expectation that Cyan would not be producing new content in the future. The third

generation began in 2011 with the release of CWE source code and CWE-compatible

server software like MOSS and DiRTSAND.
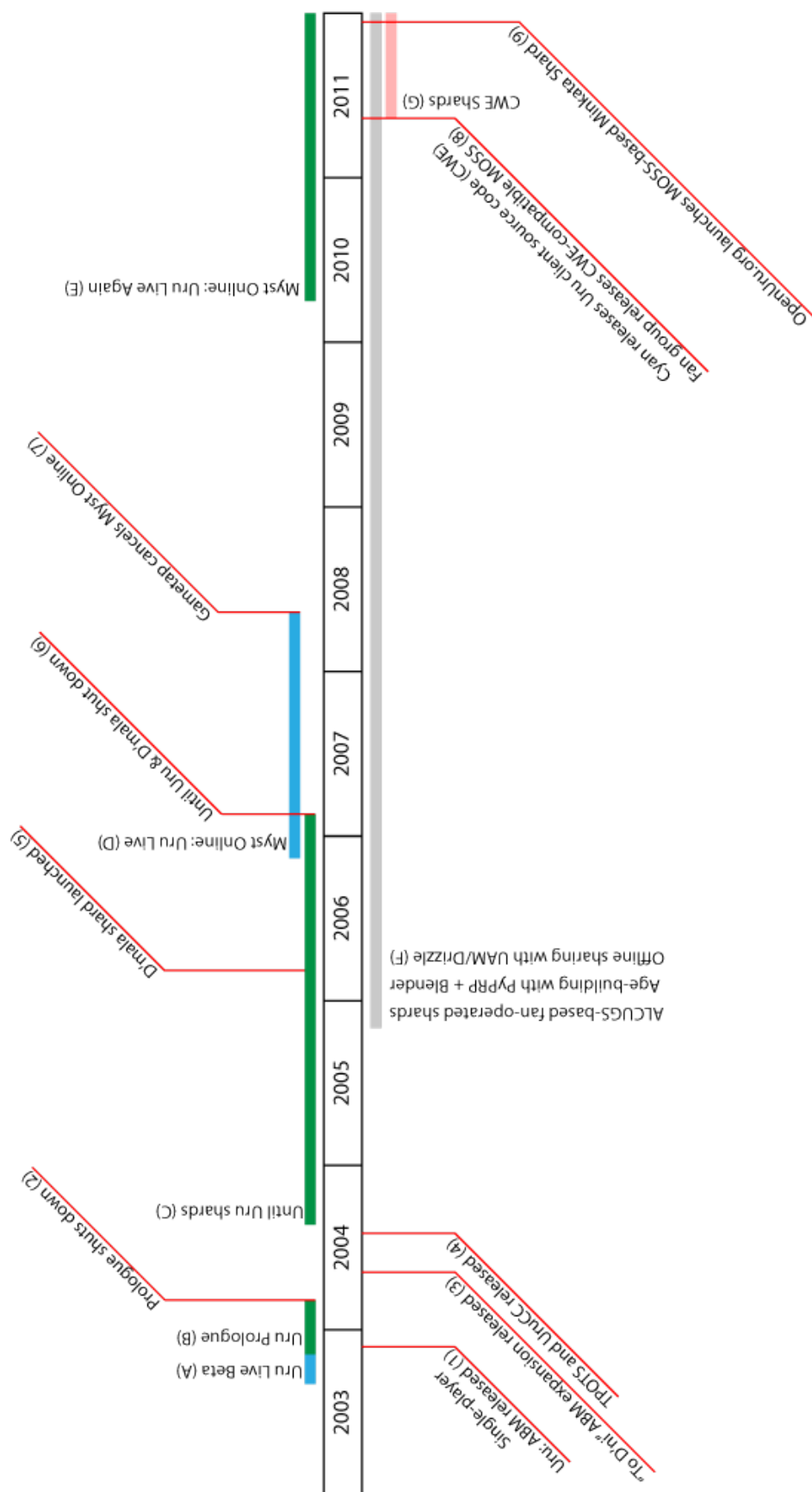
Figure 5. Timeline of key events (numbered) and multiplayer versions (lettered) of Uru, 2003-2010. See the Timeline Key below for a detailed description of events (numbered items) and Uru epochs (lettered items). *Source: Diagram by the author.*

2003 2004 2005 2006 2007 2008 2009 2010 2011

Uru Live Beta (A)
Uru Prologue (B)
Until Uru shards (C)
Myst Online: Uru Live (D)
Myst Online: Uru Live Again (E)
Offline sharing with UAM/Drizzle (F)
CWE Shards (G)

Single-player Uru: ABM released (1)
"To D'ni" ABM expansion released (3)
TPOTS and UnUCC released (4)
Prologue shuts down (2)
D'mala shard launched (5)
Until Uru & D'mala shut down (6)
Gametap cancels Myst Online (7)
ALCUGS-based fan-operated shards Age-building with PyPRP + Blender
Cyan releases Uru client source code (CWE)
Fan group releases CWE-compatible MOSS (8)
OpenUru.org launches MOSS-based Minkata Shard (9)

Table 1. Explanation of key events from the timeline in Figure 5.

Events (numbered items)

1. <u>Single-player Uru: ABM released</u> – Much of the core content from Uru Live was released as part of the single-player Uru: Ages Beyond Myst (ABM). Cyan did not initially plan Uru to be a single-player game, but produced the offline version at the request of their publisher, Ubisoft.

2. <u>Prologue shuts down</u> – Prologue was shut down when Ubisoft withdrew its support for the project in early 2004. This marks the beginning of what I call the first generation of fan content.

3. <u>"To D'ni" ABM expansion released</u> – The city and D'ni caverns were made available in the form of *To D'ni*, a free downloadable expansion pack for ABM. Cyan had already produced this content for Prologue, and wanted to make it available to fans despite the demise of Uru Live.

4. <u>TPOTS and UruCC released</u> – The Path of the Shell (TPOTS), another single-player expansion pack for ABM, included content that had been developed but never included in Uru Live. Cyan was forced to make last-minute changes to adapt this content for single-player use. TPOTS was sold in stores alone (for owners of ABM) or as part of the new Uru: Complete Chronicles (UruCC) package, including ABM, TPOTS and To D'ni.

5. <u>D'mala shard launched</u> – D'mala shard was an Until Uru shard run by Cyan, and a precursor to MOUL. It was the first canonical reincarnation of the Uru storyline since Prologue, and was a precursor to MOUL.

6. <u>Until Uru and D'mala shut down</u> – Shortly after the commercial release of MOUL, Cyan pulled the plug on the authentication server that allowed Until Uru shards (including D'mala) to operate.

7. <u>GameTap cancels Myst Online</u> – GameTap withdrew support for MOUL in April 2008.

8. <u>Cyan releases Uru client source code</u> – The recent release of Cyan Worlds Engine (CWE) source code and Myst Online Server Software (MOSS) provides an alternative to ALCUGS for fan-run servers, and allows fans to create and share new Ages that take advantage of the newer game engine. (Previously, fan Age developers could only produce new content for Uru client software based on UruCC.) These events pave the way for the second generation of fan content production (see *Epochs of Uru* item G).

9. <u>OpenUru.org launches MOSS-based Minkata shard</u> – OpenUru.org, the fan group largely responsible for the distribution of CWE development software and MOSS, opens its first MOSS-based test shard, called Minkata.

Table 1 (continued).

Epochs of Uru (lettered items)

A. <u>Uru Live Beta</u> – A closed, un-publicized invite-only beta testing version, which transitioned directly into Prologue.

B. <u>Uru Live Prologue</u> – Public seed for Uru: still a closed beta, but owners of Uru: Ages Beyond Myst could apply for an invitation to Uru Live. Invitations were granted in small batches as Cyan/Ubisoft sought to grow the player population in a gradual, controlled manner.

C. <u>Until Uru</u> – Multiple fan-operated shards, licensed by Cyan. No new content was added to the game.

D. <u>Myst Online: Uru Live (MOUL)</u> – also called "GameTap era." This was the first fully public commercial release of Uru Live, published by GameTap, a subscription games service owned by Turner Broadcasting. Players paid a monthly fee for a GameTap subscription in order to access the game. New content was actively developed and added to the game.

E. <u>Myst Online: Uru Live Again (MOULa)</u> – a single server operated by Cyan, free to play. Cyan does not actively support or develop new content for MOULa.

F. Second Generation fan content (POTS-based software):

- ALCUGS shards – A Live-Compatible Uru Game Server is server software developed unofficially by fans, based on code from Uru: Complete Chronicles. ALCUGS-based server shards have been the primary means by which fans have developed and shared new Ages.

- Around this time, fans started developing new Ages using the PyPRP plugin for Blender (3D graphics editing software). New Ages could be shared on ALCUGS multiplayer servers, or downloaded for offline play using the Uru Age Manager / Drizzle software.

G. Third Generation fan content (see also *Events* item #8):

- New fan-run server shards are based on new CWE-compatible server software – either OpenUru.org's MOSS, or an alternative developed by the Guild of Writers, called DiRTSAND.

1.2.2 Inter-World Migrations

In between incarnations of Uru, the fan community was not idle. They set up refuges and colonies of sorts in other virtual worlds and online spaces. As chronicled extensively in Pearce (2009b), many Uruvians migrated to There.com and Second Life, where they established new communities, using the content creation tools of these virtual worlds to build original or derivative Myst-themed spaces. As Uru re-opened and re-closed, players migrated back and forth multiple times, but many also chose to maintain a presence in the Uruvian spaces they had carved out in There.com and SL, splitting their time between multiple worlds.

CHAPTER 2:

LITERATURE REVIEW

2.1 The Phenomenon of *Myst*

Early scholarship on *Myst* has focused on its status as one of the first commercially successful examples of a hypertext or hypernarrative, and its success in adding visual and spatial dimensions to hypernarrative. The original *Myst* game engine is for the most part a HyperCard stack of pre-rendered scenes, with clickable "hot-spots" in each scene that would cause the image to switch to a new scene. Jones (1997) asserts that "*Myst* is fundamentally a hypertext product," not radically different from previous HyperCard applications: "it's just that the cards contain images rather than verbal lexias." Moreover, he claims that the conceit of the linking books is an intentional commentary on the nature of hypertext and its use in computer-based entertainment: "The books in *Myst* are clearly self-conscious products of our own Late Age of Print. Their magic is of a historically specific kind, connected to hypertext and what it portends for the aura of the Book and its culture" (1997).

Jones also provides some glimpses into early Cyan design culture: referring to the *Myst* prequel novel, *The Book of Atrus*, he finds that "the Cyan design team has self-consciously and literally inscribed a book at the 'origin' of their 'non-linear' hypernarrative" and that "[h]aving become gods of the new media, heroic garage entrepreneurs, the members of the *Myst* team still feel the need to be traditional authors" (1997).

Murray (1997) identifies a strong connection between storytelling, navigation through a virtual space, and the pleasure of problem-solving in *Myst* as well as other games. *Myst* does not merely provide a virtual space, it structures that space in such a way that it is experienced through specific modes of navigation. As the player navigates through the space, he/she also progresses through the story (Murray 1997: 130-131, 137-139). The process of navigation is further enriched by puzzle-solving: "Computer-based journey stories offer a new way of savoring [...] a pleasure [of problem solving] that is intensified by uniting the problem solving with the active process of navigation" (Murray 1997: 139).

Myst has been described as the first example of a CD-ROM game as art (Carroll 1994) and "an indication that computer games had 'come of age'" (Pearce 2008a). However, Murray argues that *Myst* represents the adolescence, not the maturity, of the medium:

> One element that renders both the Brontë juvenilia and the Millers brothers' fantasies so claustrophobic is the undisguised nature of their wish fulfillment. *Myst*'s primitive vision of evildoing and rich rewards *is appropriate to the current early stage of electronic fiction development* [emphasis added]. [...] In order for electronic narrative to reach a higher level of expressiveness, the medium as a whole must make the shift that Charlotte [Brontë] made, that is, away from adolescent rehearsal fantasies and toward the expression of more realistic desires. (1997: 166-167)[4]

Pearce (2008a) characterizes *Myst* has having established "a new language of spatial storytelling," finding that *Uru* players employ a specific style of spatial literacy learned from the conventions of spatial storytelling in *Uru* and previous Myst games. Pearce has previously published extensive ethnographic research on Uru itself (2006; 2008a; 2008b; 2009b). Among her key findings are the following:

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[4] *"Millers brothers"* refers to Rand and Robyn Miller, creators of *Myst* and founders of Cyan Worlds.

- Contrary to the traditional axiom exemplified by Huizinga (1955), play is not fundamentally unproductive. Uru players are seen to engage in "productive play" through constructive activities, such the creation of new virtual spaces with distinct visual styles. Furthermore, they have played a key role in developing online community-based educational initiatives such as the *University of There* in the virtual world *There.com* (Cf. Pearce 2006; 2009a; 2009b).

- The "magic circles" that encompass virtual game spaces are not wholly bounded, but are porous: "just as contemporary world cultures must be looked at in a global context, online virtual worlds must be looked at in the context of the 'ludisphere,' the larger framework of all networked play spaces on the Internet" (2009a: 137).

- Uruvians apply the spatial literacy and puzzle-solving skills they have learned as players to the challenges of restoring, revitalizing and expanding the Uru world – such as building Uru-themed spaces within the technical constraints of other virtual worlds, or the software "hacking" that allowed the development of fan-operated servers: the players' "dislocation from *Uru* became a puzzle to be solved" (2009a: 145).

The current research builds off of Pearce's past Uru research. In terms of Uruvian fan culture and fan Age-building activities, I focus on events that have occurred since the closing of GameTap's MOUL, including the move to Cyan-approved, open-source Age-building tools and the second and third generations of fan content. Thus, chronologically speaking, this work picks up where Pearce's account leaves off. Furthermore, I explore Cyan's history, culture and design goals and consider how these have shaped the

characteristics of the game itself, the culture of its fans, the evolving relationship between the two, and the practices of fan creative production.

2.2 Designing for Open-Endedness, Contingency and Emergence

Both Pearce (2009b) and Malaby (2010) consider how worlds ("play ecosystems" in Pearce's terms) can be designed to produce open-endedness and emergent behavior. Pearce (2009b: 31-32) shows that virtual worlds lie on a spectrum from fixed synthetic worlds where players are presented with a packaged experience made for them by the designers (e.g. most MMORPGs), to open-ended, co-created worlds where the world itself is built by collective action (e.g. Second Life). In a co-created world, "players are encouraged to contribute to the actual creation of the world, a design approach that leverages emergence as a production strategy" (2009a: 188). Uru began as a fixed synthetic world, but I find that it has since been shifting toward being a co-created space as fans develop new content, and new tools to further accelerate that development of new content. However, Pearce finds that "emergence happens, regardless of the world type, but can be promoted or hindered, whether by intent or by accident, by the game's features, flaws, and bugs" (2009a: 188). Malaby (2010) notes that designing to promote emergence leads to a paradox: how can developers promote emergence without anticipating the forms it will take, yet how can they anticipate that which is, by definition, unexpected? The forms that emergence takes are typically not those expected by the designers: for example, both Second Life (Malaby 2010) and Uru (Pearce 2009b) turned out to support vibrant social communities in a way that their respective developers did not anticipate.

2.3 Designer Culture and Ideologies

Malaby (2010) finds that the culture of the software development company itself is reflected in the affordances of world they create. Specifically, he identifies key design features of Second Life, such as supplying all users with fully-featured world editing tools, giving users ownership and the right to monetize their own virtual intellectual property, allowing virtual currency to be traded for real-world money, and adopting a small-government approach that entails minimal regulation and interference with users' activities. He argues that these design features have their roots in the core techno-liberalist philosophies and political ideologies of the company's founders. In general, the extent to which certain kinds of open-endedness are encouraged or hindered depends on the game's software affordances; those in turn depend on the culture and philosophy of the designers.

That artifacts can encode the ideology of producers as part of their design architecture has been established in scholarship such as Winner (1986) and Johnson (1997). Referring to physical architecture and urban planning, Johnson claims that "each design decision echoes and amplifies a set of values, an assumption about the larger society that frames it" (1997: 44). Lessig summarizes these insights by asserting "Spaces have values" which "manifest […] through the practices or lives that they enable or disable" (2006: 85). Moreover, Lessig extends the principle beyond the physical world to include software architecture and the affordances of virtual spaces as spaces that encode values.

2.4 Participatory Culture and Co-Creation

I draw on the notion of textual poaching, first proposed by de Certeau (1984) and further developed by Jenkins (1992), to explain how fans selectively reappropriate elements and conventions of the designed artifacts presented to them (whether it is TV shows, in the case of Jenkins, or virtual worlds, in my research), in order to produce their own meanings and participatory artifacts. In many cases, fans are seen to assert authority or ownership over texts even though they are corporate-produced. Jenkins documents ways in which fans have attempted to revitalize shows to prevent them from being cancelled (which has parallels in Uru's cancellation), and how they assert themselves as creators of content themselves (e.g. fan-fiction, which has parallels in fan Age-creation). Pearce (2002) and Poremba (2003, cited in Pearce 2009b: 43) see players in online games as co-creators contributing to story-worlds through emergent play – even within fixed synthetic worlds. Some of the ways in which Uru fans draw on a toolkit of narratives and conventions in order to build emergent narratives are documented in Pearce (2009b) and are further explored in the current research, with emphasis on post-GameTap world-building.

Significantly, de Certeau's notion of textual poachers characterizes them as wanderers: "readers are travelers; they move across lands belonging to someone else, like nomads poaching their way across fields they did not write…" (1984: 174). The metaphor of textual poachers as nomadic resonates with the reality of Uru players, who have wandered from one world to the next, seeking ways to selectively leverage the affordances of each to carve out their own cultural niches.

CHAPTER 3:

METHODOLOGY

3.1 Summary

This work is foremost an *oral history* of the rise and fall of Uru, and its subsequent revival by fans, as told through the point of view of both the game's developers and the player community. My fieldwork was thus divided into two phases: the first, to investigate Cyan's design goals, practice and workplace culture; the second, to explore the culture and creative practice of player communities working to restore and develop new content for the game.

For the first phase, I had the opportunity to visit Cyan's headquarters in Spokane, Washington, where I was able to observe work practice, review hundreds of original Uru design documents dating back to the late 1990s, and interview several key personnel, including company founder and Creative Director Rand Miller. Interviews lasted about one hour and followed an open-ended format, in which I had prepared about a dozen general prompt questions in advance, and encouraged interviewees to speak at length regarding topics of interest to them, allowing follow-up questions to suggest themselves organically and spontaneously. My prompts focused on several key areas, including:

- The interviewee's role and responsibilities, past and present, as a Cyan employee
- The interviewee's contributions to Uru and (if applicable) past Myst projects
- Overall design philosophies and goals for Uru, and how they compared to previous games

- Community management goals, difficulties that arose with community management, and ideas on what (in the interviewee's opinion) has held the Uru fan community together through multiple cancellations

The work environment at Cyan, common personality traits of employees, division of labor and how Cyan may or may not differ in these respects from modern mainstream game development. Rand Miller and Cyan CFO Tony Fryman helped in the selection of employees to interview. Interviewees were selected based on their availability and on the goal of sampling a representative cross-section of people who had worked on Uru. Besides Miller and Fryman, I also spoke with Richard Watson, who worked as a coder on one of the earlier Myst games and has since become Cyan's resident D'ni cultural expert—responsible for inventing the D'ni language and recording its history. Additionally, I interviewed a senior Quality Assurance testing lead and a senior employee in Customer Support.

Field research at Cyan also included a guided tour of the workspaces, of which I made several sketches and maps. I was given access to several filing boxes, containing thousands of pages of design documentation, including sketched puzzle diagrams, finished artwork, architectural drawings, multiple iterations of puzzle design specifications, internal technical manuals for using Uru-related production tools and in-game developer commands, internal correspondence and market research studies. I catalogued each document with a brief paragraph describing its contents and purpose—with additional detail where warranted—for later reference. It was necessary to come up with such a system to capture the essence of each document since my time in Spokane was limited.

In the second phase, I participated in a variety of online fan communities, with particular focus on those where members were involved in some kind of creative production of new content related in some way to *Uru*. Participant observation in fan community provided a cross-section of fan creative activities as well as the general cultural background against which these activities take place. I attended meetings of The Uru Commons (TUC)—a social group that meets weekly in the Cavern—and of a storytelling group that gathers regularly to read and listen to stories from the D'ni legendarium. I also attended monthly All-Guilds Meetings, where a large group of players would gather to share news on topics such as their own Age-building projects, improvements to the core game software and real-world meet-ups. These public group meetings provided opportunities for telling others about my research project and for 'snowball sampling'(Berg 2004: 36, 151) whereby current research participants may suggest additional people for the researcher to interview. I conducted interviews with several players involved in building new Ages (both in Uru and other virtual worlds) or in other activities, such as story-writers and storytellers, programmers of software tools, D'ni cultural experts and community organizers. I also participated first-hand in the exploration of fan-made Ages – sometimes alone using the single-player Age library software called Drizzle, and sometimes in an online multiplayer environment with the Age's creator giving me a guided tour. Exploring player-made virtual spaces online had the unpredictable but fortuitous result that I would often, by chance, encounter the builder there, providing an opportunity to invite him/her to participate in my research. In one instance, while I explored their build, two Age-builders in the virtual world OSGrid—Tia and Hannah—discussed plans and logistics in the local chat channel so that I was able to

'hear' them. A few Age-builders have published extensive documentation on the web, providing significant insight into their design process. Further investigation of activity in the fan community was accomplished through web forums, especially those pertaining to content creation such as the Age Authors Guild forum.

This approach to research is rooted primarily in the qualitative investigative methods of cultural anthropology, with an emphasis on participant-observation and in-depth interviews, supplemented by archival research. Interviews with Cyan personnel were conducted on-site at Cyan's offices in Spokane, Washington. Participant observation and interviews with members of the fan community took place online in Uru (including both the official Cyan-run MOULa shard and fan-operated shards) and in the virtual worlds of Second Life and OSGrid. These latter two virtual worlds became field sites because of vibrant communities of Uru players and Uru-themed builds located there – a result of the inter-world migrations described previously.

OSGrid is not as well-known as Second Life, and warrants additional explanation. It is essentially an open-source clone of Second Life, consisting of a network ("grid") of servers running OpenSimulator software. It is compatible with SL's client-side viewer programs, such that SL users need not install any new software in order to visit OSGrid. The surface appearance and core affordances of the OSGrid world are nearly identical to those of SL, but OSGrid stresses an open-source, non-commercial architecture in contrast to Linden Lab's business model. Anyone with a computer and internet connection can run an OpenSimulator server, connect it to OSGrid, and start building a themed space, whereas Linden Lab owns and directly maintains all of Second Life's servers and sells/rents virtual space as real-estate to builders, who pay monthly fees for land use

rights. Because of the visual, spatial and surface-level technological similarities between OSGrid and Second Life, I refer to them collectively as Linden-Type Virtual Worlds, or LTVWs.

For over a decade, social research in online communities has moved towards an ethnographic approach that takes virtual spaces to be field-sites in their own right, rather than as intangible communication media. Markham (1998) and Hine (2000) have advocated the use of Geertz-style "thick description" (1973) in researching and writing about virtual spaces. Cultural anthropology in virtual worlds and online games, with emphasis on participant observation, has been exemplified by studies such as Reid (1996), Taylor (2006), Boellstorff (2008), Pearce (2006; 2009a; 2009b) and Nardi (2010).

In-situ observation allows the ethnographer to experience participation in the social group *in the same way that other participants experience it*[5]. Other participants in the online community are not meeting up in-person most of the time. They collaborate using the same modes that the ethnographer uses to interact with them. For example, I observed and interviewed a two-person team of two women collaborate on a massive, ongoing building and storytelling project in OSGrid. One lives in the UK, the other in the US, and they meet on OSGrid, communicate through the modes OSGrid offers – which is primarily text-based chat.

Data were analyzed according to the practices of Grounded Theory (Strauss 1987; Glaser 1992; Emerson et al. 1995), whereby findings and theories emerge from coding for patterns and themes found within the data. The data themselves consist of field notes from participant observation sessions, catalogues such as the annotated list I made of archived documents at Cyan, interview notes and transcripts and chat logs. The

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[5] Or, at least, in the best possible approximation of the same way that other participants experience it.

convention of Grounded Theory holds that everything is data—that is, to the extent that this is possible, data should not be filtered out during observation according to what seems relevant and what does not. Collected data were analyzed using a process of 'open coding' whereby data points are grouped together conceptually. This yields the first set of themes, which are further developed and cross-referenced through selective coding. Categories identified through selective coding suggest an overall theory (an answer to the research question), and the categories themselves then form major threads of argument in the resulting monograph. In this case, my categories correspond roughly to the section headings in this paper, with themes like an economy of storytelling, personal motivations for game design decisions and the system of clues and conventions employed by developers and fan-creators in their puzzle designs.

3.2 Representation and Practice

Malaby found a "divergence between representation and practice" in the organization of work and the workplace at Linden Lab (2010: 64). My research does not attempt a direct comparison of representation and practice due to the fact that active, large-scale production was not occurring at Cyan at the time of my fieldwork. My method relies instead on attempting to reconstruct details of work practice based on the vestiges left behind in the physical space, coupled with the accounts of employees and original documentation of Uru's development. This is where oral history diverges from participant observation, in that an oral history is already filtered through meaning-making and possibly even politicizing processes by the time it is presented to the ethnographer—a tamer version of the problem encountered by historians who must read between the lines of folkloric or politicized accounts of past events to gain a multifaceted perspective

on the events themselves. The processes by which representation and rhetoric are constructed may differ for retrospective accounts, such as those I collected at Cyan, as opposed to concurrent accounts, such as those collected by Malaby at Linden Lab. However, far from obscuring actual practice, representative and retrospective accounts constitute reflective practice (Schön 1983) and can provide valuable insights.

The design reflections provided by the creators of the fan Age of Adrael is an example of reflective practice occurring within the fan community. The Adrael team produced an intentionally filtered, curated and richly explanatory account of their workflow to present to the general public. Cyan, in contrast, supplied me with several boxes stuffed full of haphazardly-sorted design proposals, technical manuals, rough sketches and internal memos, as well as a handful of VHS tapes with uncut interview footage, and told me to "have fun." The fan-Age documentation is succinct, with many of the key points already distilled out of a mound of data, but the Cyan documents offered an unfiltered glimpse of actual communication between game designers. The former *references* creative practice; the latter *indexes* it.

3.3 Position of the Researcher

I began my research of the Uru community as a *partial* outsider: I had not previously been active in this community and was not acquainted with its members. However, even before I met them, I already shared with them some cultural background knowledge, folklore and an understanding/literacy of Myst's game design conventions (which are described in more detail in Chapter 3). Having been an avid fan of the Myst series since childhood, having played through all of the games and having read all of the novels, I was already positioned to understand the significance of references to past

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games and events in the fictional narrative when I encountered references to them—whether in Cyan's design documents, in fan-made Ages, or in casual conversation with other players. This familiarity with the subject matter has proved to be an asset for three main reasons. First, I was able to understand casual references to fixtures of the backstory, such as the names of characters and Ages, thus saving my research participants from having to explain each reference in detail. Furthermore, my experience prepared me to understand the significance of certain aspects of D'ni culture that had been adopted by players—for example, greeting each other in traditional D'ni fashion with the word "Shorah" (see also Pearce 2009: 98). In my own experience, fan use of "Shorah" predates Uru, as it was the common greeting used in the web-based, text-only Cyan Chat room, where I was active in 1999-2000[6]. Finally, a prior knowledge of themes and conventions used in Myst-style puzzles enabled me to have the insight connecting conventions employed in fan-made Ages to those established by Cyan's Ages (see Chapter 6). On the other hand, any amount of pre-existing insider knowledge can pose difficulties of bias in a research project, and for me the key challenge has been to separate those findings that are interesting to me as someone who has a mental/emotional investment in the story world, from those that are of broader scientific interest concerning the culture of professional game developers and its relationship to the culture of fan-sourced game design.

I was familiar with neither the active player community nor Age-building practice when I started this project. Although I participated briefly in GameTap's multiplayer MOUL, this was at the end of the second 'season' of content—all new material had

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[6] The Cyan Chat room can still be accessed online at http://cho.cyan.com/chat/standard/chat.html. However, none of the participants in my research study mentioned spending time there, now or in the past.

already been added to the game, no major story events were occurring and I was minimally involved in group activities. A few months later, GameTap announced the closing of MOUL. With the help of Dr. Pearce, who has contacts in the community, I was able to get in touch with my first key informant at TUC, who helped me to find other potential participants and also introduced me to the tools for Age-building and for visiting fan-created Ages. Although fan Age-building activities have been ongoing for some years, prior to this research I was largely ignorant of Age-building practice and its products, in Uru and in other virtual worlds. In short, I shared some common cultural background with Uruvians (thus, partially an insider) while also having the outsider perspective of one who spends years in a deep slumber, wakes up to a changed world and relies on observation and the explanations of others to piece together what has happened in the intervening time.

CHAPTER 4:

ENTERING THE CAVERN

4.1 A Day In The Life of the Restoration

Every Sunday afternoon, at 1:00 p.m. Cavern Time, members of The Uru

Commons (TUC) link into the circular fountain plaza in the middle of Bevin, a quiet

residential neighborhood on the outskirts of the D'ni cavern. As each new explorer

appears out of thin air, he or she walks a short distance to join the partial circle of other

explorers who are already standing here. The sound of the babbling fountain is

punctuated every minute or so by the strange, echoing chugging noise that marks each

new arrival—a noise made by the linking process itself, apparently.

The explorers are, in fact, players in the massively-multiplayer online game

(MMOG) *Myst Online: Uru Live*. Their avatars are moving about in a three-dimensional,

virtual representation of the vast, underground city of the D'ni, an ancient cavern-

dwelling civilization that disappeared hundreds of years ago but left behind the ruins of

their empire. Of all the artifacts they left behind, the most curious and remarkable are the

Linking Books. The D'ni, it seems, wrote books which could, by describing the

characteristics of another hypothetical world in rich detail, establish a portal or "link"

with which a living person could travel between that new world and our own. These other

worlds that are apparently written into existence are called "Ages."

The players are gathering for TUC Hangout, a weekly social event characterized

by group conversation, or occasionally involving a trivia game, storytelling session or

organized expedition to explore the other Ages. The event is informal and unstructured,

and usually attracts 10 to 20 participants, most of whom belong to a core group of regular attendees. It lasts two to three hours, with people coming and going as they please, so that towards the end it dwindles to a small handful of individuals and finally dissolves.

On this particular day, I am making my way to TUC's Neighborhood for my first Hangout experience. T'alin, a TUC member, sends me instructions via private typed messages transmitted to my "KI," an in-game device that could be thought of as the D'ni version of a smartphone. Since I am still in my Relto—my personal home Age and library—he directs me to find the "Nexus" on the shelf in my hut. When I click on this yellow tome, it opens to a page presenting a linking panel. I touch it, and the world around me fades out… …and back in again, only I am no longer in my Relto hut, but in a small, round, dimly-lit chamber of stone. This is the Nexus, and there is no way in or out of this room save through the use of linking books such as the one I just used.

Figure 6. Using the Nexus machine to select a linking book. *Source: Screenshot by the author.*

As the name suggests, the Nexus is a transport hub for accessing the dozens of Ages and cavern districts of Uru. Following my guide's instructions, I walk towards a bulky contraption that sits against the wall and click on it. In the ensuing animation, I see my avatar place his hand into a scanning device, which pulsates blue, indicating that it has scanned my KI. The machine presents me with a touch-screen display listing the different Ages I can visit. I select the "Public Links" tab and scroll through the list which contains all of the Uru Neighborhoods—technically, the place called "Bevin" is just a prototype, copied in multiple separate instances called "Hoods" to allow different groups to use the same identical space simultaneously but separately. I find the listing for TUC's Hood instance and click it. The machine lurches to life, spinning a large book-bearing wheel. When the wheel stops, another linking book pops out and opens in front of me. The linking panel shows the scene of the neighborhood fountain plaza. I touch it, and link through.

The first thing I learn about attending TUC Hangout is to move aside once I link in. T'alin suggests to me that standing right on the linking spot may not be a great idea unless I want the next person who links in to end up on top of me. Seeing the wisdom in this, I move aside to join the proto-circle of avatars standing around the plaza.

Figure 7. The fountain plaza in TUC's Hood. *Source: Screenshot by the author.*

The second thing I learn is that the day before, an All-Guilds Meeting (AGM) had taken place in Uru. This monthly gathering allows members from all the various Uru groups to meet up together and share their news. It appeared that this most recent meeting of AGM had been a source of frustration for some: a couple of today's Hangout attendees voicing (in text chat) their upset at the way another individual (not present today) behaved at yesterday's AGM. As they verbalized harsher observations of this other individual's personality, T'alin implored them: "Be nice. It's the D'ni way."

T'alin's request was not an attempt to take sides, or to question the validity of the criticisms against the absent individual. Rather, the statement asserts the value of diffusing conflict in a calm and respectful manner. But what is most significant about it is that it frames this particular social value as an aspect of the D'ni culture that Uru's explorers have ostensibly inherited.

The event described above led me to consider the question, "What is the D'ni way? What does it mean to act according to the D'ni way? Is there a D'ni culture? What are D'ni values?" T'alin provided one small aspect of what the D'ni way means to him, but culture is not just rules of etiquette or social conventions of conflict resolution. The culture of Uru fans is also about the way they explore, build, converse, solve puzzles, have fun, and more.

4.2 Summary of Findings

This research yields four primary findings, which will be explored in the following two chapters.

The first finding is that game development in the case of Uru was a deeply personal enterprise for its creators. Although Cyan's design process was informed by relevant research on player types and the different kinds of experiences they seek in games, many aspects of the game mechanics were filtered through the particular personality types of the designers. The personalities of the players turn out to be largely consistent with those of the designers. The creators also had specific philosophical goals in mind that became principles for motivating and guiding the game's design. Specifically, they did not set out to make a "puzzle game," but rather a compelling explorable space and a dynamic, participatory story-telling economy therein.

Uru fans were able to assert ownership over the story-world and the means of production of new content by proactively applying technical and problem-solving skills. These are the same sorts of skills that players must apply to solving puzzles in Myst games (Pearce 2009b). Uru fans seem especially likely to have these skills. Cyan's openness to fan ownership certainly had an impact: Cyan planned from the outset to

move towards an open-ended, participatory system by which fans could produce new content for Uru—although they never worked out the details of this system during Uru's commercial life. Open-source tools recently released by Cyan give fans an official and fully above-board channel for making new content, but in practice fans have already been able to hack together their own unofficial tools. It is unclear how the outcome may have differed if fans had encountered resistance to their cause, rather than sympathy, from the game developers. In parallel to the creation of new Ages in Uru itself, new Uru-inspired content has also been built using other game engines or in other virtual worlds like Second Life.

This research finds that when fans produce new content, they draw significantly from an existing shared cultural repertoire of cues and conventions. These conventions are supported both by the software affordances of the development environment *and* by cultural precedent—they are readily adapted to Myst-like narratives and are easily "read" by experienced Myst players (a type of spatial literacy similar to that identified by Pearce (2006, 2009b)). In other words, when fans become writers (or Writers, creating new Ages as the D'ni did), they apply the established practices of reading in order to shape their practices of writing. Story conventions such as linking books that serve as portals between multiple worlds easily become metaphors for understanding the virtual spaces in which Uru and Uru-inspired story-worlds are situated. In Uru-inspired spaces built in other virtual spaces like Second Life, conventions are imported for their narrative and cultural significance, despite the fact that the software affordances of the new environment might not be suited to those conventions.

Finally, fan participation in rebuilding and restoring Uru is contested, with conflicts arising over issues of roleplaying, aesthetics, authenticity, intellectual property and basic logistics. In an interesting twist, these conflicts parallel those of the story-world itself, in which multiple factions find themselves at odds over how (or if) best to restore the lost D'ni civilization.

CHAPTER 5:

CYAN WORLDS AND THE FOUNDATION OF D'NI

5.1 Workspace and Division of Labor

Cyan's offices are located on the northern outskirts of Spokane, Washington, tucked away behind a thick belt of trees, on an unmarked lane adjoining a country highway. It is, I reflected when I finally found the entrance after driving past it three times, reminiscent of Myst itself, in which the sites of importance are so often hidden behind the scenery, along an unassuming side-trail off of the beaten path. It also drives home Miller's point about around-the-corner views: the building is hidden as I approach, only to suddenly reveal itself from behind the trees as I round the last corner.

Figure 8. Cyan's iconic front entrance, with its "ripped out" façade.
Source: Photograph by RIUM+ / Mike Ando, used with permission.
http://riumplus.deviantart.com/art/Cyan-Worlds-142261538

The building itself, a cement-and-red-brick structure about the size of a large

house, is separated from the parking lot by a ravine spanned by a bridge that leads up to

the door. The most striking feature is the "ripped-out" front façade: a large, jagged-edged

hole in the brick surrounds the entrance, revealing a modern steel-and-glass face

underneath. Over the parking-lot end of the bridge stands a lintel that would perfectly fit

into the gap in the façade, as if it had simply been ripped off of the building and dragged

to the other side of the ravine. Other Myst-inspired theming elements are found inside.

For example, two downward stairways converge on a landing from which another short

flight of stairs heads further downwards. At yet another landing, the stairways diverge yet

again. The steps themselves are carpeted and of ordinary size and grandeur, but their

layout hints at something more palatial, something that might be found in the D'ni city.

The artists' studio on the basement level has a starry sky painted on the ceiling—a tribute

to the planetarium room from *Myst*, but is otherwise dark. The windows are blocked with

black paper or cloth—with good reason, as Miller explains: "Artists working in front of

computer monitors—they just cover up the windows. It was black things on all the

windows downstairs. We put them in the basement. Even the few windows that were

down there got covered with black."

Figure 9. Bifurcating staircases: at Cyan (top) and in the virtual Cavern (bottom).
Source: Photograph (top) by Tony Fryman. Screenshot (bottom) by the author.

Figure 10. The basement room which housed Cyan's artists' studio in the past: the starry ceiling pattern is a tribute to the Planetarium scene from *Myst*. *Source: Photograph by Tony Fryman.*

According to Miller, the building's theming has a general practical purpose for the company—to attract and retain talented workers:

> Really what we wanted with this building is that people were happy they came to Spokane, Washington to work at. It's a cool place where you can bring your friends and they go, "Oh this is cool!" Because work is hard no matter what you do and where you do it, and the last thing you need is to work in a place where you don't even bring your friends […] We were trying to get some really talented people, in Spokane, Washington. It's not L.A. or Atlanta or New York […] and when they flew in, we wanted them to see the outdoors and the cool building and stick with us for a while.

Decisions about the physical construction of the workplace bear on the actual division of labor at the company, as the earlier point about the artists' studio indicates.

At the time of my research, Cyan was running on a skeleton crew, but I had the opportunity to catch a glimpse of how it was laid out in its heyday.

The division of labor at Cyan (at least as it pertains to *Uru*) is a simple division of tasks into conceptual categories: a development team handles programming, while a separate art team produces graphical assets. A design group is responsible for crafting elements of plot, puzzles and general game mechanics. Quality assurance and customer support are the province of a fourth team.

Figure 11. QA/support area in the main building. *Source: Photograph by Tony Fryman.*

Of particular interest is the arrangement of the developers' and artists' studios. Initially, they were both located in the basement of the main building—the developers on one side and the artists on the other, on their respective branches of the bifurcating staircase. During *Uru*, an annex building was constructed opposite the main building to house larger studios for the development and art teams. This structure, built specifically for *Uru* production, consists of two wings set at an obtuse angle. The division into artists' side and developers' side that had existed in the old building was not only maintained, but entrenched in the construction itself. The team leads were given the freedom to specify their own interior layouts for the wings.
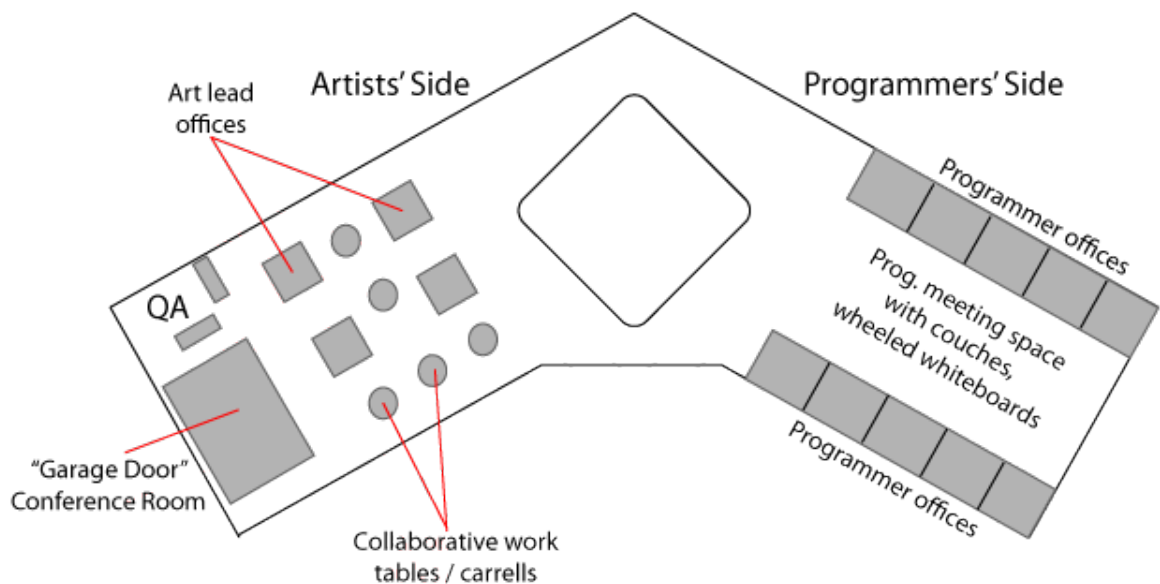
Figure 12. Cyan annex building constructed to house Uru's production teams.
Source: Diagram by the author.

The developers chose to keep the central space of their wing open, and lined the sides with individual offices where employees had their personal workstations. Each

office has a door, which blocks the noise, but also has a glass window so that workers are not completely isolated while in their offices. In *Uru*'s day, the common area was set up with wheeled chairs, tables and whiteboards, so that developers could confer in the common area in small groups as needed, before returning to their offices to do individual work. The rafters are fitted with bright spotlights that could be used to keep the common area brightly lit.

In contrast, the artists' side has a bare floor and minimal overhead lighting – in keeping with the theme that artists prefer to block out ambient light as much as possible. Several large, black desk-carrels are distributed throughout an otherwise open, warehouse-like space. The large desk surfaces are bracketed by tall side barriers that block ambient light from the work surface. Also located in this wing is a conference room, set up as a sort of interior structure with wooden panels, as if it was apparently built after—rather than as a part of—the building. One of the walls of this conference room is in fact a manually-operated garage door—a tribute Cyan's pre-Myst origins as a small studio operated out of the garage in the house of one of the head developers.

The architecture of the workspace is inextricable from the architecture of work itself. Malaby (2010: 62, 63) finds that the organization of space at Linden Lab reflects the organizational hierarchy and division of labor as well as giving rise to certain practices that emerge to fit the space. Linden employees were housed all in one large room, at desks arranged in small clusters facing towards each other, with no other walls or divisions of space. Even the top-level administrators worked at desks in this room along with everybody else, and there were open sightlines between all employees. This shaped practices (such carefully timing a visit to another employee's desk) that emerged

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to facilitate the "horizontal circulation of information" (Malaby 2010: 63). Linden Lab's flat, homogenous environment seems to stand in contrast to the compartmentalization of labor at Cyan. However, Malaby suggests that there is "order beneath a claim to disorder" at Linden Lab, and that labor was actually divided into departments which were reflected in spatial arrangements, despite rhetorical claims to the contrary: for example, senior developers tended to be clustered in the darkest corner (for the same reasons that Cyan's art team preferred the darkness—to reduce glare on their monitors) (2010: 63, 64). Not only is work divided at Linden Lab, it is also arranged hierarchically, in spite of a corporate culture that "resisted vertical authority to the point of denying its existence almost entirely" (Malaby 2010: 62). For example, programmers and developers seemed to wield more prestige and influence than employees in other positions, like content and community management (2010: 64).

Cyan's mode of dividing space by department creates defined spaces for certain types of work and allows each department the freedom to shape the affordances of that space to suit its own needs. But imposing such a structure on workspace poses its own difficulties, and Cyan was not immune from the interdepartmental communication snags that afflict most companies. One Cyan executive, Doug, suggests that communication between the different teams was not always perfect, noting that the artists' side and programmers' side sometimes "didn't talk to each other very well," and that "upstairs and downstairs didn't talk to each other very well" ("upstairs" being the ground floor in the main building, where administration, QA and creative direction were housed, while "downstairs" refers to the developer and art studios on the basement level). He recounts a story of how he received a phone call one day from another executive, Edd, who was

away on business out-of-state: Edd asked, "Do you know what they're doing downstairs?!" The implication is that the lines of communication between upstairs and downstairs were occasionally so unreliable that a person on the other side of the country might hear about events occurring "downstairs" before a person in the same building would.

Another employee notes that the separation of art from programming means that programmers do not always have a clear idea of what artists are planning, while artists do not have a clear idea of what content is actually practical to implement in a running program. An artist might come up with an ambitious idea and ask a programmer, "Is this possible?" When the programmer says "yes," the artist takes that response as a green light to continue working on the idea. The problem is that they have only discussed the theoretical technical possibility of the idea, not the practical feasibility of implementing it. They have not determined whether the artist's idea can be incorporated in the specific area of the game he intends, or whether the programming team has the available time to work on the implementation. The artist has not clearly articulated what he intends to do, and the programmer has not communicated the practical limitations she has to observe – constraints that make the difference between what *can* be done and what *ought* to be done.

5.1.1 The Role of Authority

In Miller's view, the most important general personality trait for Cyan employees is that they lack an authoritative and overbearing streak. "We don't do well with overbearing people," he explains. Cyan's managerial style strives to avoid what Miller sees as the typical business "I'm-your-manager-so-you-have-to-do-what-I-say" paradigm.

Cyan has a culture of resisting vertical hierarchy and authority, similar to that identified by Malaby at Linden Lab (although as Malaby notes, there may exist a distance between the stated ideal of an egalitarian workspace and the actual practice).

Design decisions are not made unilaterally. Miller explains, "I can't design by myself," and that he needs a team of people with whom he is comfortable and who are comfortable with him. This is crucial because design ideas should, in Miller's view, be vetted based on merit, and one person's ideas should not trump all others simply because of seniority:

> I do have strong ideas […] but I'll always back down […] if two or three of the people disagreed with me on a four person design team, I'm not gonna push it, usually. You know, I'll argue it, pretty strongly, but if I can't convince them, then I figure it's not a good argument. […] I like people being able to feel like they can override the main guy. That's good for both of us. It's like I have to make my argument just as much as they have to make theirs.

He gives an example of his own pet idea that got shot down by the rest of his design team. *Uru* opens with a scene in the New Mexico desert, inside the perimeter of a large, fenced-in plot of land, with a cone volcano in the center. The player's first task is to walk a short distance to find a camp trailer, where an NPC provides further instruction. Miller's original vision for this scene was that the player would start in the middle of a vast, featureless desert plateau, miles wide, with no remarkable features except for the indistinct shape of the volcano's tip, visible just over the horizon. In this version, the player would have to walk for several minutes, anticipating the destination without knowing what to expect. Miller recalls that when he pitched this idea, the rest of the designers laughed at him. However, his idea did eventually find a niche in the later MOUL iteration of the game, in the form of the desert Age of Minkata, which hosts a vast orienteering/treasure-hunting puzzle game. Part of the appeal of the Uru project to

designers was that it offered opportunities for the expression a wide range of ideas and creative styles, as Miller notes: "The interesting thing about Uru is that it was diverse enough that everybody could have a voice. So, if we weren't working on an Age that I wanted, it was inevitable that we were working on one that somebody said, 'Hey, this would be cool from my point of view.' "

5.2 The Vision

Cyan's vision for Uru was based on a simple two-part formula: make a never-ending Myst story with episodic content and shared exploration. As Miller explained to me:

> The idea behind Uru was simple for us at the beginning. The idea was, what if that experience with Myst, at its core—I mean, that was the easy part—what if you could take that and do two things with it: you could make it so that it didn't end, so that there were always new places to explore, and you could do it with other people. It was more of a shared exploration. Those were the two things that drove all the design. That's what I was looking for—that's what it was for me, that's what kind of set us on that course.

Myst was not intended to be a traditional MMOG—not just in the sense that it lacks combat, leveling and death, but because the multiplayer experience was not necessarily intended to be "massive":

> In my mind, online [play] was a way for us to provide never-ending content, not necessarily to have millions of your closest friends by you. I would have been happy if two people could have played together, or three. […] So we called it massively multiplayer only in the fact that […] there was hopefully going to be massive amounts of players in it, but not that you'd be playing with them all—that's not what we needed online for […] really online for us was because we wanted the journey not to end. We wanted it to seem like every time you went back in there was new stuff. So that was the important part.

Cyan's earlier rhetoric about MUDPIE, the project that would eventually become Uru, centered on leveraging the potential of a new medium. Myst had been crafted to take

full advantage of the CD-ROM as a medium in which to package a visually and aurally rich, immersive, interactive experience. Uru, then, would maximize the potential of broadband internet technology. In the archived unedited footage from a late-1990s interview, Miller explained, "Nobody is purposely saying, 'We've got this great technology, what can we build on it?' We want to do exactly that […] People are looking for reasons to get broadband." This rhetoric framed Cyan as the pioneers of new media, and they clearly hoped for Uru to revolutionize Internet-based entertainment as much as *Myst* revolutionized computer-based entertainment.

By the time Uru was nearing completion, however, Massively Multiplayer Online Games (MMOGs) like *Everquest* and *World of Warcraft* were already well-established. The rhetoric changed. Uru was touted as a different kind of MMOG—a quintessentially Myst-like one. This echoes the way that the original *Myst* game was positioned in opposition to the traditional video game motifs of its time. Jones says of *Myst* that: "[A]s the publicity for the product repeatedly makes clear, no one dies in this game—*Myst* is an antithesis to the maze game *Doom*—the user tends to relax into the rhythm of aimless wandering, a flâneur without the crowd, strolling, alert yet dreaming… (1997)."

If *Myst* was the antithesis of *Doom*, then *Uru* would be the antithesis of *World of Warcraft*. From the designers' point of view (according to Miller), this was a matter of carrying forward the constraints established in *Myst*: avoid the cliché of video-game death, avoid the pitfalls of a large inventory, keep the interface minimalistic and the screen free of clutter. They also made a conscious decision that *Uru* would not emphasize economics as a significant gameplay factor—none of the virtual currency or tradable loot that are the hallmarks of popular MMOGs.

It is tempting to shoehorn *Uru* and the Myst games in general into the genre of puzzle-adventure games. Certainly puzzles are ubiquitous—from the symbolic logic puzzles often used as off-the-wall versions of combination locks, to mechanical puzzles in which the player must figure out how to operate arcane machinery, to spatial puzzles (which are discussed further in Chapter 3). But for Cyan—or at least for Rand Miller—it was never about the puzzles: they were only a means to an end. "Everyone says we build puzzle games," he tells me, "and we don't. We build exploration games. We wanted to build places that were amazing." Exploration is what drives the gameplay, what provides the incentive to continue: "I think […] at the core of human nature is a desire to see what's around the corner—to just peek at, to see, be surprised at what's around the corner." But there has to be some kind of "friction," some resistance to the act of exploration:

> We can't just let there be amazing things around every corner. Or we can't let you get to too many corners too fast. That's the friction. In our particular case, in our particular style of game-making, we made that into puzzles […] We tried not, in many cases, for those to be puzzles: we tried to build those into the environment as just natural blockades, natural friction that you just had to figure out. Other people put bad guys with guns as friction. […] Friction is frustrating at every level. We just chose one that was a lot more relaxed.

Once again, the particular brand of friction implemented in Myst games is framed as an alternative to traditional video game motifs of violence and imminent danger. The idea of using puzzles as a "more relaxed" form of friction echoes Jones' comment above regarding the original *Myst* game.

To further illustrate the connection between friction and reward in spatial exploration, Rand gives the example of Mount St. Helens, explaining that national parks are actually designed to produce a certain experience, with the approaches to the great

landmarks laid out so as to build anticipation by providing around-the-corner glimpses, with a "great reveal" at the end. In the case of Mount St. Helens, the peak itself is hidden from view to the observer in the visitor's parking lot, but is suddenly revealed around a corner after a walk down a short trail. This, Miller says, is the kind of experience Cyan aims to build:

> We love to give people that satisfaction of exploring and finding. But it's *not* about the puzzles. Never has been. In some ways the puzzles can make can make the reveal a little more rewarding or satisfying, because it's more of an achievement. But that's just more about the friction: the more friction you have, the more you may appreciate the thing, because it was harder to get to it.

Particular emphasis is placed on the notion of making spaces that are "rich, both visually and story-wise"—Uru's designers treated this as a design constraint. The terms "richness" or "depth" are more than just vague descriptors of how to design a compelling world: there are specific ways in which it is consciously designed to have depth, and they extend beyond the task of making something that is highly detailed and visually appealing. The most obvious (and arguably most important) aspect of depth in Uru is the intentional construction of an extended story world. Much of what players see in the game is the tips of icebergs that hint at vast narratives beneath. Some of these background narratives are only indexed in the game-world, while others are included in their entirety. Many of them are cultural cues that tie into other Myst artifacts in a way that fans of the series will recognize and appreciate, thus leveraging existing systems of meaning. For example, Uru provides the first *visual* glimpses of story elements and settings that had previously appeared in *text* narratives—scenes like the Desert Cleft or the Great Shaft described in the Myst novels. Such scenes are densely packed with narrative significance by simply indexing past stories. Another way in which the story-world achieves depth

and believability is with the D'ni language. Devising a fictive language that is essentially gibberish makes for a fragile, superficial story veneer that readily falls apart under pressure. Richard Watson, who developed the D'ni language, clearly wanted it to be more realistic than that. D'ni not only has a consistent lexicon of several hundred words, it also has well-defined rules of morphology, phonetics and syntax, as well as its own written script. There are even D'ni-specific idioms which signal underlying cultural meanings— for example, instead of using qualifiers like "very" or "extremely," the D'ni apply degrees of emphasis to phrases by using numbers from their base-25 counting system as symbolic stand-ins:

> [T]he phrase "I am a little tired" in D'ni becomes, "I am tired to two." "I am very tired" would be, "I am tired to twenty." To exaggerate something, the D'ni would use a number over twenty-five. "I am incredibly tired," in D'ni could be written or spoken as, "I am tired to thirty" (Kadrey 1997).

Watson says he became interested in invented languages from watching science fiction television shows, but the practice of inventing deep, well-defined languages for fictional worlds probably pre-dates television. While they may have been the first, the Elvish languages devised by J.R.R. Tolkien are arguably the most influential examples of fictive languages, and remain some of the most realistic and richly-defined to this day. Tolkien's work demonstrates that a carefully-crafted synthetic language goes a long way towards creating a fabricated-but-believable folklore and legend.

Similarly, Cyan set out to construct folklore with the Myst universe. In-game scenery is not just scenery—it has both detail and meaning. The background story is highly developed, as is the language, as described above. A backstory, though, is little more than an account of past (fictional) events, and might contribute very little to the story-world save for tidbits of information to satisfy the idle curiosity of players.

Providing a carefully crafted, richly detailed world does not necessarily make it compelling. For Miller, it has to do with the difference between craftsmanship and Art "with a capital 'A'."

People started calling Myst art […] I was kind of [thinking], "Well, they say that but I don't even know what that means." I'm not sure that anybody knows what that means. You can ask anybody you'll get a different opinion, so it's like "Oh! I'll make up my own opinion." … [Art] has to take time. You can't just throw together art. It has to be built by craftsmen—has to be built by somebody with *talent*. In other words he's *practiced* to do this. So it takes time, it takes somebody who's practiced at what they're doing, and then what differentiates the last thing is it has to have the intent to communicate truth. … [Y]ou have the intent that somebody will learn about themselves or about the world around them.

Miller further suggests that Uru was an opportunity for Cyan to find out if it really could make Art, having developed a degree of proficiency in the medium:

> We spent lots of time on what we make, and we have some really […] incredible craftsmen […] but, do I have the intent to communicate truth? In other words, have I taken this last step that I think is the big step for an 'artist' […] have I gotten good enough at what I'm doing that I can now imbue it with something? Can I communicate some truth with this?

This question contains echoes of Murray's (1997) prediction, discussed earlier, that computer-game narrative must move beyond the "primitive vision of evildoing and rich rewards" seen in *Myst* in order to achieve "a higher level of expressiveness." Indeed, the story of evildoing in Uru is more nuanced. Even as D'ni's former greatness is glorified through DRC restoration efforts, it comes to light that the D'ni exploited others to further their own empire-building goals. They enslaved a race of beings called the

Bahro who ultimately survived the D'ni extinction. Although Yeesha was once an ally of the DRC, at the time of the Uru game narrative she is instead working to further the cause of the Bahro, helping them to reclaim the Cavern. Yet the Bahro do not make for sympathetic characters – Miller says that they were intended to appear terrifying and unrecognizable, and they were occasionally known to perpetrate acts of violence against explorers. Cyan set out to make Uru morally confusing, rather than a simple story of good versus evil.

Miller's idea of art can be tied to thematic elements of the Uru narrative. If art "communicates truth" and causes people to "learn about themselves or about the world," then it is instructional in nature. The pre-release working title for *Uru* was *Parable*. In Cyan's archives I found a booklet titled "Parable Business Plan," printed on paper stock that was speckled and textured to look like parchment. A "D'ni proverb" printed on the cover page hints at how the name "Parable" would tie into the theme of the story: "When the world is changing, those who understand the past can see the future." Intended moral ambiguity notwithstanding, the Myst story is in many ways a parable—an instructional story, a cautionary tale, a morality play. The ruin of D'ni is the story of how hubris brought down an entire civilization, and repeated attempts at "restoration" seem to repeat the same mistakes of the past. The story also teaches how the D'ni, in their pride, exploited those whom they saw as lesser beings, and how their great and majestic empire was built upon such exploitation. It ultimately challenges players to consider: should the D'ni civilization be restored at all, and if so, can it be done in a way that will not repeat the wrongs of the past and lead to ruin yet again?

Myst's status as parable likely has its roots in the cultural background of those who created it. Pearce (2009b: 73) notes that "The original *Myst* designers, minister's sons Rand and Robyn Miller, embedded implicit Christian spiritual themes into the game and its narrative." Although the Christian subtext is subtle, and there is no indication of an evangelical agenda (Pearce 2009b: 74), it is likely no accident that the game was to be called *Parable*, a word that refers to a story-form that is most well-known from its use in the Christian gospels.

To give a concrete example, one of the tenets of D'ni moral philosophy is that the act of Writing a new Age does *not* create it – rather, it establishes a link to the one world that most closely matches the description set out in the book, out of the set of countless possible worlds that exist. Creation proper is the sole province of the Maker, whom the D'ni – dedicated monotheists – name Yahvo. One of the most disastrous forms of D'ni hubris was that corrupt and prideful Writers came to believe that they were, in fact, god-like creators.

5.2.1 A Storytelling Economy

Cyan planned to *produce new folklore* in a novel way, by relying on the player community to turn synthetic game elements into places and events with lasting meaning and holding power. According to the Parable Business Plan document, "The premise of Parable is simple: create an inviting space that is so compelling, it must be shared." This sentiment is echoed by TUC member Thomas when he speaks of the days of *Prologue*: "As things were added, you just had to go tell someone."

Uru was notable for driving an ongoing story using live actors in the virtual space to play out events. Furthermore, those events would happen at a specific time, in a

specific place, one time only. This differs significantly from the convention of most

MMOs, in which plot points are advanced through pre-rendered cinematic scenes and the

scripted actions of NPCs. Every player has the same epic story of legendary heroism, and

witnesses the same set of canned events, which recur time and again like scenes from the

movie *Groundhog Day*.

Uru's design rejects these conventions, instead opting to make story events

special by making them happen only once, as if they were real-world events. As a player,

you were either there to see history being made, or you were not. But this meant that

stories would be talked about, told and retold. They would become part of a player

folklore and achieve an almost legendary status. Miller explains:

> There's value in that storytelling simply because people love to be storytellers.
> And the number of layers that it goes through to get from the first guy who
> experienced it to the guy who heard it three days later… doesn't matter. […]
> It's never further than a step or two away for anybody. It's always "a friend of
> my aunt who put the cat in the microwave." […] Because really, all the
> intermediate steps in storytelling don't matter—storytelling somehow is
> always close to us. That worked like a charm in Uru, because the experiences
> would occur, on that night, with our actors. […] People would come in and
> things would happen, [and] they would immediately go out and tell the
> exciting things that happened, because they were one-off things. They weren't
> gonna happen again, nobody else could ever be there. They felt special… .

Both Cyan employees and fans liked to refer to one specific event as an example

of one such story. One morning during the MOUL era, a staged event occurred in

Ae'Gura in which two explorers (played by Cyan actors) became trapped after an

earthquake. They were attacked by a group of hostile Bahro while DRC workers (also

actors) tried to rescue them and other explorers (actual players who happened to be in-

world at the time) stood by and watched helplessly. The players were not totally

passive—in fact, according to one of the Cyan puppeteers, the players almost derailed the

story by offering suggestions that the storytellers had not anticipated. Specifically, those versed in Myst-lore knew that the Bahro have an aversion to water and to snakes, so they suggested that the trapped explorers attempt to deter the Bahro by drawing the sign of a snake on the ground. Cyan's storytellers had to adapt quickly to keep the story on track.

Players took significant initiative in establishing extensive networks for the telling and re-telling of such stories. One explorer named Tevran describes his role that day as a member of the Cavern Relayers, a player group that made it their job to spread the news around to different areas of the Cavern when important events took place. Technical constraints meant that there was a maximum number of people (50) who could actually be in Ae'Gura that morning to witness the events first-hand. Upon hearing that something happening, people would link in to the city to see it for themselves, so the cap was quickly reached. As a Relayer who happened to be on the scene, Tevran was able to narrate the events in real-time as they occurred, forwarding his account via in-game instant message to Relayers in other Ages, who could then repeat the narrative for the benefit of those who were unable to link to Ae'Gura. Although the Relayers disbanded when MOUL shut down, Tevran has continued his role as a D'ni folklorist and storyteller, hosting weekly small-group gatherings in Second Life and in MOULa, where he shares stories from the D'ni legendarium.

5.2.2 Getting People to Care

The story-world itself contains conflict over how exactly D'ni civilization should be restored. Exploration efforts are coordinated by the bureaucratic DRC, which limits what players are able to explore by putting up barriers in the cavern. Some of these barriers are meant to be circumvented as part of the gameplay, but in the story-conceit,

the barriers are cast as diegetic elements: they are present because the DRC is trying to keep explorers from wandering into dangerous areas beyond. The DRC also tries to control access to the various Ages: they stress that explorers should not use any linking books they find that do not have a DRC stamp of approval, as they may lead to dangerous or unstable Ages. Of course, there were plenty of unapproved linking books scattered throughout the game and Cyan intended for explorers to use them, even though the fictional DRC does not.

As part of the story, an ongoing conflict began to emerge between the DRC on the one hand, and the NPC Yeesha on the other. Yeesha championed the cause of the Bahro, mysterious creatures with linking powers well beyond those that the D'ni had mastered. The Bahro, which Yeesha calls "the least," were enslaved and exploited by the D'ni in the past but have recently attained freedom. Some Bahro sympathize with the human explorers, but others are bitter and violent, with a vendetta against humanoids. Yeesha challenged players to "choose sides"—either Team Yeesha or Team DRC, although the game was cancelled before this conflict had a chance to play out. Miller frames the DRC/Yeesha conflict as an experiment to see if they could get payers to care about the stakes in the ongoing narrative:

> We were trying to trigger some kind of emotion that would make care. We're gonna have the DRC, and we're gonna have Yeesha, and we're gonna have these Bahro, and we're not gonna make it real clear where the lines are drawn and whether people are good or bad […] and it wasn't that they were opposed, but it was fun watching people take sides. And then we tried to push that a little further, and we tried to have factions that would actually have some discontent, and start to voice that discontent as part of the storyline. Will people actually care enough to do this?

The players themselves were not all enthusiastic to choose sides, however, precisely because they *did* care. Miller continues: "That was where, especially with our

community, it wasn't received necessarily in a happy way." Some players accused Cyan of trying to sow divisiveness in a community that valued its sense of unity and togetherness (Pearce 2009b: 149). The apparent result of the experiment is that Cyan could, in fact, make people care, though sometimes in a negative way (an aversion to the conflict-ridden story) rather than a positive one (enthusiastic participation).

5.2.3 Game Design Is a Personal Enterprise

As I'm sitting in the break room at Cyan, poring over two large banker's boxes stuffed full of design documents, slide presentation printouts, printed emails and chicken-scratches on notepaper, Rand Miller walks into the room to meet me. After introductions, he implores me to "have fun," and gestures to the chaos that is strewn about on the table in front of me. "All of this is very dear to us," he proclaims, and then jokes that I probably now know more about it than they do. Jokes aside, the underlying sentiment is sincere: all this design material is very dear to Cyan.

I am left with the impression that, in many ways, Uru was not just a job, or a product, but a labor of love. Rand and others see themselves not as people who make money by building story-worlds, but as people with an underlying desire to build these worlds and tell these stories. World-building is costly, and those costs must be offset with some source of revenue. The motivation is less about profits and more about supporting an artistic endeavor. When asked in a 2011 interview about recent layoffs at Cyan, Rand said that they have always tried to use savings from past projects (e.g. the highly profitable *Myst* and *Riven* games) to keep the company going and to keep workers employed as long as possible. He notes that "one of the nice things about not being publicly owned is that we don't *have* to make a profit!"

It turns out that significant design decisions can be made, and mechanics incorporated into games, as a result of the individual personality traits of game designers. When I asked Rand to talk about the decision to make Ages in Uru that required the cooperation of multiple players to solve, I learned that the rationale behind this mechanic was based on a personal notion of community-building. "Everything gets passed through my 'introvert filter'," Rand says. He explains that as an introvert, he is quite comfortable and outgoing around friends—people he already knows—but uncomfortable and reserved in settings where he does not know anyone. There was a danger, he felt, that introverts would be less likely to stick around in Uru if they did not connect with anybody. He reasoned that many Uru players would be introverts like him, while many others would have an outgoing personality type that drove them to want to help others. If the introvert-types could be matched up with the helper-types using some pretext like a cooperative puzzle, then the introvert-types would have personal connections in the community, which meant that they would be more likely to keep coming back. Another product of Rand's introvert filter was the player's personal Relto: others can only come there if they are invited. As such, it acts as an introvert's refuge, a safe space to which one can retreat alone or with close friends. At any rate, the introvert filter and the set of social affordances it creates seem to be consistent with the actual needs and temperaments of players. Pearce (2009b: 126) describes the group of players she studied as a "community of loners" – a collection of mostly introverted people who had formed a tight-knit community amongst themselves.

5.2.4 Player Types and Equity Types

Uru's designers over time developed a typology of players in which each player type had his/her own play style and set of goals or "payoffs" s/he was looking for in the gameplay. Age design was organized around the idea that players were being made to do work, and they had to be rewarded for that work in different ways. An Age's design document would have several different flow charts showing how a player would progress through the Age—for example, a "puzzle" flow chart would follow all of the machinations in which the player would have to engage in order to solve the puzzles, whereas a "story discovery" flow chart would detail the ways in which story elements were revealed bit by bit to the player as s/he moved throughout the space. The main categories of payoff were as follows:

- Exploration – the reward for overcoming an obstacle is that it opens up a new area to explore.

- Story – the space tells a story, both through visual elements and through written text such as in journals left lying around: overcoming an obstacle reveals a new part of the story.

- Puzzles – the satisfaction of having a "light-bulb" moment and solving a puzzle is its own reward.

- Visual – similar to exploration: a "big reveal" or a breathtaking view, as a reward for overcoming friction. One design document talks about the moment when a player reaches the end of an Age and finally gets to take a good look at the giant mechanical contraption from which s/he just escaped from the outside—a moment that the design document refers to as "the money shot."

- Social – the puzzles described above that require cooperate effort are an example of social equity, giving people a "connection" with others.

- Status/Achievement – trophies and such given as rewards for tasks – these accrue in players' personal Reltos.

These player typologies may have been based in-part on early ideas of target market segments for Uru. Cyan commissioned a field study by Anderson Graduate School of Management to determine what the market segments were and what the best distribution strategy would be to target each market segment. They identified four main types: hardcore Myst fans who would play Uru because it was Myst; puzzle-game fans who would come for the cerebral puzzles; casual gamers who would come for the social interaction; and episodic TV loyalists who would be attracted by the never-ending story.

The practice of segmenting one's target audience into different player types goes back to Bartle's seminal MUD player typology (Bartle 1996), in which he identified four types of players: explorers, achievers, socializers and killers. The former three types are represented in Cyan's typology, but killers – those who derive enjoyment from imposing themselves upon others – are not well-supported in the design scheme. Just as Cyan Worlds does not "do well with overbearing people," Uru does not do well with overbearing players.

I asked my contacts in TUC if they thought of themselves as a particular player type. Most stressed the importance of exploration and puzzles, but also noted that community—the connections they had made with others—was one of the things that kept them coming back (especially after the new content ran dry). Rand himself says that although the purpose of doing an online Myst game was to deliver never-ending content,

and that the multiplayer aspect was secondary, it turned out that although the never-ending content part failed, it was the communal connections that people formed that had kept them coming back, and that was still keeping Uru alive. According to Pearce (2009b 126, 132), this came as a surprise not only to the developers but also to the players too, who were originally attracted to the gameplay itself, but stayed because the people were addictive.

There were also players who considered puzzles to be of high importance, to be ends in themselves and not just means to provide friction. Some also stressed the importance of the visually compelling nature of the world for creating immersiveness. In one example, when I was interviewing Thomas in the TUC Hood, he suggested that we go somewhere nicer—so we went to the scenic, peaceful garden Age of Eder Delin. A little later, when I asked him about the player typology, he suggested that visual payoffs were one of the most important things, for him.

The players I interviewed typically identified awards related to status and achievement as a very low priority, but this should not be taken for an outright lack of interest. Players would still seek to obtain the various collectible items strewn throughout the Ages. These collectibles include unique pieces of avatar clothing, "Yeesha pages" that enhance the appearance of one's Relto by adding customizations such as trees and waterfalls, and "sparklies"—tiny, scintillating orbs that, when touched, will spawn a trophy back in the player's Relto. On TUC field trips, the primary objective was usually to solve an Age's core puzzle and pose for some group photos, but players would typically point out the locations of sparklies and Yeesha pages in case others had not yet collected them, and would offer to assist – for example, by operating machinery needed

to obtain particularly hard-to-reach sparklies, a task that is usually much easier with multiple people. The appeal of Uru collectibles probably extends beyond the motivations of the stereotypical Achiever who is fixated on stats, scores and completionism (the desire to complete every possible task and maximize every possible score). Uru's collectibles are not merely trophies, but serve expressive and communicative purposes. For example, Pearce (2008a) notes that one's avatar clothing or the appearance of terrain features in one's Relto indexes which areas of the game one has visited, in a way that can be "read" by other explorers who have also visited the same locations.

CHAPTER 6:

FANS AND THE RESTORATION OF D'NI

6.1 Designing Open-Endedness

Cyan planned to have a channel for fan content-creation at the outset, though they never worked out the details. They first tried to achieve open-endedness in the sense of a never-ending story they would keep extending by adding new content. The narrative and spatial metaphors were both easily adapted to new content: new Ages could be discovered, restored, approved for use. When the game was cancelled, they were just beginning to get ideas of how to make player-run Guilds that would be modeled after the original guilds of D'ni society. The Authors Guild, for example, would be people who actually created Ages (in out-of-character terms, they would make art and 3D models, and do programming). The Guild of Maintainers would be the first to see new Ages—essentially, bug testers and beta testers. In D'ni civilization, the Maintainers had to inspect new Ages and give them a stamp of approval, to ensure that people were not writing unstable or dangerous Ages. After cancellation, plans for extensibility and open-endedness moved in the direction of giving tools and source code to fans and letting them take ownership of the game and new content creation.

Both Pearce (2009b) and Malaby (2010) have described the fundamental dilemma in trying to design a virtual world for open-endedness and emergence—how can designers *plan* for a world to *produce the unexpected*? In the case of Linden Lab, they gave users access to "the tools of the gods" (Malaby 2010: 46, 59)—highly flexible development tools that they could use to build in Second Life. Linden Lab was motivated

not just by the idea of "outsourcing" open-endedness to the users, but by a philosophy of "technoliberalism" (2010: 16, 59), in which they would provide a platform that empowers people with technical skills and an entrepreneurial spirit to build their own virtual spaces (and monetize them). For Cyan, open-endedness was about a story for which "the ending has not yet been written"—a motif that appears many times throughout the Myst games and novels. Giving players the tools with which to make their own virtual spaces would help drive the continuing story. It would also enrich what I call the "storytelling economy" by empowering players as storytellers themselves, not just as consumers of stories.

Interestingly, both Second Life and Uru emerged as *social worlds* in a way that their creators did not expect. Linden Lab wanted an open-ended platform for techno-entrepreneurs (Malaby 2010), while Cyan wanted a story-world. Both were surprised to find that many people inhabited their worlds in order to socialize with others in groups, large or small. Several emergent social behaviors arose in the Cavern and in the D'ni refugee communities in other worlds, from player-run trivia games, to D'ni language lessons, to the D'ni Olympics game-within-a-game event (Pearce 2009b: 29), to weekly storytelling nights where one person would read selections from the Myst novels out loud (in voice chat) for an audience.

The huge category of emergent behaviors being considered here is, of course, the creation of new content for Uru by fans—what I (and perhaps others) refer to as the Restoration of Uru, which thematically parallels the in-story Restoration of D'ni.

6.2 The Writer's Workshop: Tools and Techne

It is important to note that fan activity has not been limited only to creating new Ages to add on to an existing framework—the Cyan-approved Age-building framework did not even exist until quite recently (early 2011). Fans have been active agents in asserting control and responsibility over aspects of Uru since the original cancellation of *Prologue*. The idea of making new *content* was out of the question when the core tools to do so did not even exist. Fans developed two solutions to this problem.

One solution was to migrate to different virtual worlds, like There.com and Second Life, that offered out-of-the-box world-building tools (see Pearce 2009b). For the purposes of this discussion, the co-creation of new Ages of Myst must be understood as not being limited to a single virtual world, as the boundaries between worlds are "porous magic circles" (Pearce 2009b). I take Age creation to include not just making new virtual spaces using the Uru engine, but making spaces that are part of the Uru *story-world* yet exist in some other virtual world/platform like Second Life. Then the Uru story-world (as distinct from the Uru software-world) is a highly co-created space—although it does have a fixed synthetic core in the form of the official Cyan-produced story canon.

The other solution was to reverse-engineer the code of Uru itself in order to produce Age-creation tools and fan-run server solutions. The fans took it upon themselves to bring such tools into existence. There are two threads to this project of direct intervention with the Uru software: making it possible to write new Ages within the Uru game engine; and establishing an Uru multiplayer environment for players to explore these new Ages alongside the Cyan-produced core content. (Following the GameTap cancellation in 2008, no *official* multiplayer Uru shard existed for nearly two

years until the launch of MOULa in 2010, which means that during this period, a fan-operated server shard would have been the only way to provide a multiplayer Uru space, with or without new Ages.)

To restore the multiplayer environment, a group of "hacker" fans undertook to write their own Uru game server based on the UruCC retail version. They also engineered a development system that would ultimately allow members of the larger community to produce their own Ages.

For some, the OOC[7] Restoration effort to salvage something from the remains of the game began immediately with the first cancellation. One player tells of running around in the cavern on the day it was announced that *Prologue* would be closing, trying while he still could to make contacts with people who would be interested in trying to keep Uru alive:

> It was hell. I was trying to find contacts who understood the technical underpinnings but there were loads of (let's use a politically correct term) explorers wailing about the end of this fantastic game. I remember one (and I use the term carefully) moron who typed "I'm so sad" over and over again, making communication with anybody trying to salvage anything from the situation extremely frustrated [*sic.*].

This quote suggests that, for some, keeping Uru alive hinged on having a proactive, down-to-business attitude that avoids dwelling on mourning the loss of the game. In any case, the scramble to save Uru by employing technical knowledge sets the tone for the entire restoration effort.

Myst players are problem solvers, and many of the puzzles from the Myst games have demanded skill at learning new technologies. Pearce (2009b: 147) has noted that Uru players placed a high value on the mastery of specific skills. Pearce gives the

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[7] Out Of Character – that is, restoration of Uru as a software product, as opposed to the fictional in-character restoration of the D'ni empire.

example of "mastery at a variety of events that subverted objects and environments in unusual ways, such as balancing on an upended pylon (traffic cone) or tightrope-walking up a tent rope" (2009: 147). In the context of the Restoration and Age-building, valued skills would tend to fall into categories relating to specific tasks involved in the building of an Age. In referring to the technical and problem-solving skills employed by Uru fans/players, I conflate Pearce's "mastery" with what Boellstorff calls "techne" (2008: 54)—a concept that goes beyond knowledge to encompass art, craft and the ability to create and apply technology to worldly tasks.

Although Age-building is sometimes called Writing, a reference to the D'ni Art by which they created links to new Ages by writing descriptive books, in practice there are multiple different tasks involved in the authoring of a new Age—concept art, 3D modeling, texturing, story-writing, puzzle design, animation, wiring, sound design and even voice acting, to name a few. While some Age-builders work alone and produce most or all aspects of their Ages by themselves, others work in groups, which each group member focusing on specific tasks for which their skills or interests are best suited. The fan-created Age of Adrael is an example of an Age that was produced collaboratively by a team of about a dozen people. The foundations were laid by one individual who had come up with a story that he wanted to tell, and who assumed the role of creative director and concept artist on the larger team after soliciting others for collaboration (Adrael development team 2011). Not all collaborative projects are so big—according to EL, a designer might produce an Age mostly by himself/herself, but then ask for help on the Age Authors Guild forum with specialized tasks, like wiring (the scripting that actually

make things happen, like buttons that open doors, or link books that take the player to a different Age) or the oft-neglected sound design.

For some, mastery is not about having sought-after skills that will be useful on a design team, but an end of its own, an aspect of the fundamental pleasure of problem-solving. One player, commonly called by his initials "BV," has a high degree of technical knowledge but is reluctant to call himself a Writer (although he does hang out on the Age Authors Guild forum) because he is not primarily interested in making new Ages. Rather, he undertakes technical tasks that may be tangentially related to Age-building because for him, these tasks are puzzles to be solved, just as the Myst games are full of puzzles to be solved.

In an introductory forum post, BV writes that he was initially interested in content creation, "doodled in Blender" (3D modeling software), but did not become a Writer. In an interview, he explains that his interest was "more the 'hacking part of content creation […] more figuring out how to do stuff than actually doing it.'" For example, he wanted to have a structure cast a shadow that would also visibly darken the avatar as it walked under the shadow. He learned that there was a feature of the game engine called "soft volumes" which could be used to change lighting values on the avatar within a certain area. BV adds, "How these soft volumes work wasn't documented very well. So I did some research myself and then wrote a technical article about it on the AAG [Age Author's Guild] wiki ." BV says that in general, his interest is in solving the technical puzzles rather than in making big finished products, but also notes that he is "too much of a perfectionist for finished products. They somehow never get finished :)".

Another of BV's projects is not related to Age creation but to analyzing aspects of the game itself and producing extravirtual tools to assist in that analysis. The "Pod Ages" in Uru are a collection of four small Ages (actually four separate locations in one Age) in which specific events occur at specific times of day—only the planet on which the Pods are located of course does not have a day/night cycle synchronized with Earth. For most players, the solution to the Pod puzzles involves realizing that the events occur at specific times and trying to arrange to be present at roughly the right time to witness them. BV, however, wanted to determine the precise timing of the cycles, a task complicated by the fact that the timing did not appear to be precise but mysteriously drifted by up to 25 seconds between cycles. BV's research into the Pod Ages culminated in his creation of a clock/calendar application for desktop and iOS devices that would determine the time in the Pods relative to Earth time and predict when events of significance would occur. As for the 25-second drift, BV ultimately determined that the drift was not by design but the result of some technical oddities with the way the game server synchronized its clock. The code itself should cue the events on a precise periodic schedule, but BV's measurements showed that this was not happening. Because of this, BV adds, "the people who have read the code (I refused to for a long time) didn't believe me when I said that the portals aren't periodic… ."

6.2.1 Age-Building Tools: A Very Brief Survey

The first successful fan-created incarnation of Uru was ALCUGS—A Live-Compatible Uru Game Server. It was built not off of existing Uru servers, but off of the single-player UruCC package. Fans wrote Python plugins for Blender—an open-source 3D modeling program—that could be used to create and export Ages into a format that

could be read by a program called Uru Age Manager (UAM), and played either offline (single player) or online on the ALCUGS-based "UAM Shard." Most fan Age creation to date has been based on tools that came out of the ALCUGS/UAM tradition, using UruCC as its base. Recently, in 2011, Cyan released the source code for their Cyan Worlds Engine (CWE), which is the engine that Myst Online Uru Live clients used. They also included their development tool, the "Plasma" plugin for 3D Studio Max. Cyan did not release source code for Uru Live server software, most likely because it contains code that they licensed from third parties and that they are not authorized to redistribute. But the CWE release coincided with the community's release of MOSS—Myst Online Server Software—a fan-written open-source server package based on, and designed for, an Uru Live core rather than UruCC.

Meanwhile, the creation of new "Ages" has taken place on entirely different platforms as well. The Camhanaich project—an Uru-inspired, collaborative story-telling build in Second Life and later in OSGrid—is one example. As a virtual world-building tool, SL is markedly different from any of Uru's development tools. For Uru, 3D spaces are modeled and textured using a 3D modeling program like Blender. The wiring is accomplished by writing Python scripts using a plugin for Blender. The Age must be compiled and exported before it can be explored in-game. By contrast, building in SL is live and real-time. The builder's avatar stands in the space he/she is building, and uses development tool overlays to make objects appear in real time. The builder can then reshape, retexture and move these objects around, and add wiring by directly writing scripts into the Second Life client, using the LSL (Linden Scripting Language). This offers a kind of flexibility and instant gratification that is not so easy to achieve with

Blender. Furthermore, Second Life is full of models and assets that other people have already created, that builders can re-use in their own creations. While there are repositories of assets available to Age-writers using Blender, they end up having to build many of their assets from the ground up. Perhaps most importantly, LTVWs provide an affordance for collaboration, in that multiple people in different geographical locations can work on the same virtual project simultaneously, and see the results in real-time.
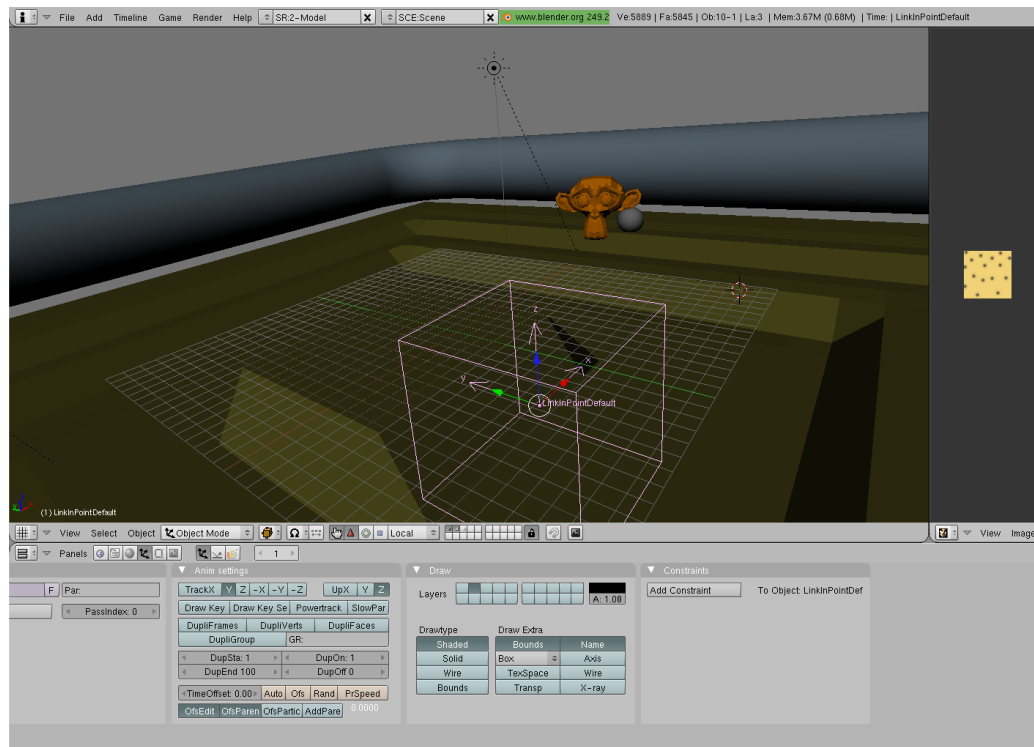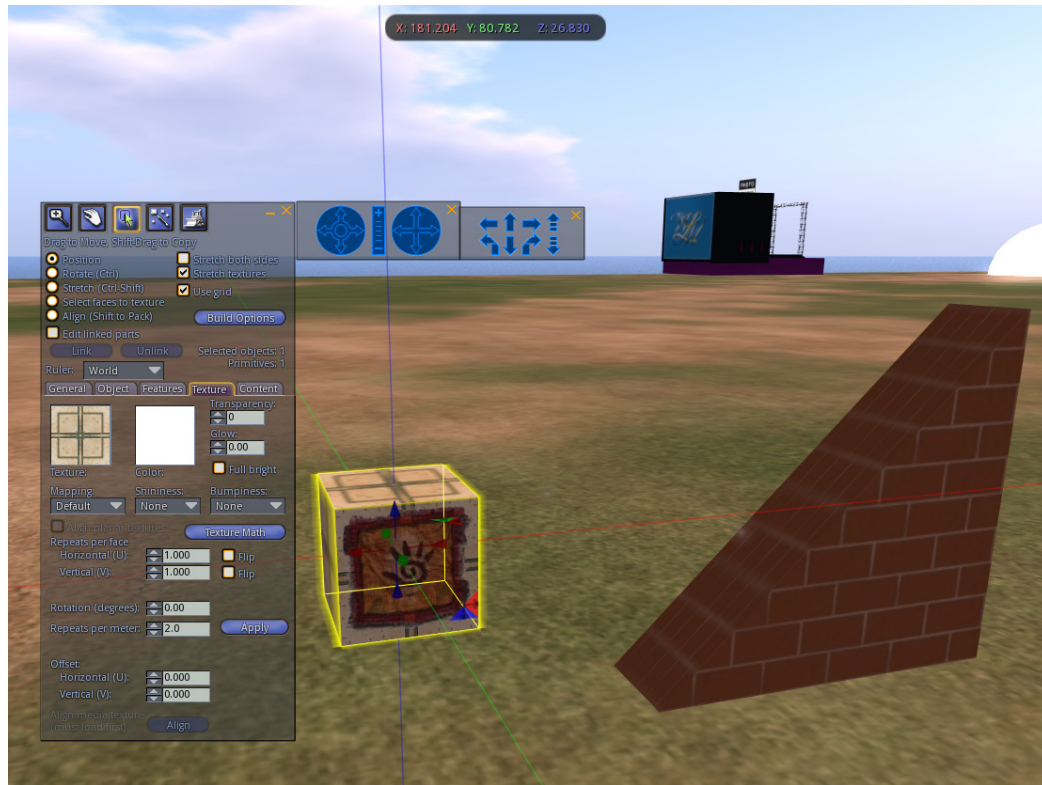
Figure 13. Comparison of real-time building in Second Life (top) and Age-building for Uru proper using Blender and PyPRP (bottom). *Source: Screenshots by the author.*

Age builders have also experimented with re-implementing Ages from Uru or from Second Life in other game engines. One of the earliest fan-created Ages was produced using the *Doom 3* engine (Pearce 2009b:157), ironically undermining the notion that *Myst* and *Doom* are polar opposites. Camhanaich builder Tia tells how one of the other Camhanaich builders is currently reproducing a part of their world using CryEngine. One reason to use these other game engines is that they often have more versatile physics models than Uru or Second Life.

Aesthetics also plays a role in the selection of a game platform to use. Tia and Hannah, two of the principle builders in the Camhanaich project, originally started building in There.com. They moved to Second Life because they found that the aesthetic affordances of There.com left much to be desired, especially after the breathtaking photorealism and beauty that is the staple of Uru and other Myst games. They described There.com as "cartoonish" and "cardboard cutouts," whereas Second Life and OSGrid allowed them to create beautiful and visually compelling worlds.

Table 2 provides a summary of server software and Age-building tools used by fans in each of the three generations of fan content that were identified in Section 1.2.

Table 2. Server software and Age-building tools used by fans during each of the three generations of fan content.

Epoch of Fan Content	Server Software	Age-Building Tools	Remarks
1st Generation	Cyan-approved Until Uru shards	Non-Uru engines and worlds, e.g. There.com, Second Life (SL), Doom 3	First migrations of Uru refugees. See Pearce (2009b).
2nd Generation	A Live-Compatible Uru Game Server (ALCUGS) client-side mod	Blender with PyPRP plugin + Uru Age Manager (UAM) or Drizzle.	Unofficial. Tech based on hacked versions of single-player *Uru: Complete Chronicles*
3rd Generation	Myst Online Server Software (MOSS) – open-source and compatible with Cyan Worlds	CWE plugin for Autodesk 3ds Max	Official and Cyan-blessed. Tech is based on newer software from GameTap release (i.e. CWE)

6.3 The Journey to Open Source

Cyan's intention to release open-source Age-building tools to the community was

not officially announced until after MOUL, but according to Miller, it was part of the

vision all along:

> I mean the fact is, this is about writing your own worlds. And even at the
> earliest stages of Uru it was [that] we want people eventually to be making
> their own worlds. And those to be part of the story. We also realized that there
> had to be filters. Because the worlds that other people make aren't gonna be
> the Disneylands. We make our Disneylands.

"Disneyland" here stands in for the idea of "a polished, perfect place built by professional

designers" (Bruckman 1995). Cyan wanted to empower players to make their own Ages,

and hoped and expected that some of the fan-made Ages would meet the same standards

of quality as Cyan's own core content, that some would "float to the top." But since

players were paying for a Disneyland-type experience, Miller felt that Cyan had a

responsibility to do at least some filtering, offering access to all fan contributions but

marking off some as curated content.

6.4 Conflicts

There is not a monolithic culture of creative practice among Uru fans. Rather, the

realm of creative practice is inhabited by a multitude of voices, and many aspects of said

practice are contested. A few of the key conflicts are explored here.

6.4.1 Restoration Roles

The DRC's role in the overarching narrative created an interesting tension and

confusion between in-character and out-of-character roles. During GameTap-era MOUL,

Cyan's QA/Customer Support department ran orientation sessions for new players. Cyan

employees in the guise of DRC Restoration Engineers – or "ResEngs" – would hold

sessions once an hour to meet with new players, show them the ropes and answer their

questions. Paul, a customer support lead and former ResEng, explains to me the tension

that sometimes arose between his IC (in-character, or in-cavern) role as a representative

of the DRC, and his OOC (out-of-character/cavern) job as customer support. On the one

hand he would avoid talking about Uru as a computer game during orientation, but it was

still his job to help players with OOC issues like technical difficulties or griefing. Some

players seemed to feel very strongly that people should adhere strictly to in-cavern roles,

while others were put off by hardcore roleplaying. As Paul tells it:

> [P]eople would get kinda heated about it, actually […] you'd have tickets
> where people complained. The difference between in character and out of
> character—they called it in cavern or out of cavern—there was a pretty decent
> divide on […] how you were supposed to represent yourself. … [O]f course
> we're [i.e. ResEngs are] supposed to represent ourselves as in-cavern. […]But
> we are employees. So that […] was really a fine line to walk.

Helping players with technical issues while trying to remain IC posed some unique

challenges:

> There's a certain point of course, you have a new player come in, they'd kinda
> started figuring the game out, they're going, "my video card," and everyone's
> going, "what do you mean video card? ha ha!" trying to play it off. And
> you're trying to send them a PM [private message] going, "Okay, send me a
> ticket here at the support site," and they can't figure out how to send you a
> PM back, and they're going, "I'm trying to answer you in a reply and I don't
> know how!" And you're going "Alright dude, just stick around 'til after this
> thing and we'll talk it out here."

It appears that a tension between IC and OOC roles arises even in emergent

activity focused on technical mastery. Of his reluctance to read the source code for the

Pod events, BV explains, "I just didn't want to destroy my IC research by reading OOC

code. It felt like cheating to solve a puzzle." I ask if he considers his IC research to be a

type of "role-playing." His response echoes Rand's assertion that Uru is not a role-playing game, but a game in which people play as themselves: "Yes, it's a kind of role-playing. I play the scientist that is myself (in real life). I don't like role-playing in the traditional sense, for that matter—playing a role that's someone else than me. I like it very much about Uru that I can play as myself."

This suggests a fine distinction between *playing a role* and *playing as oneself*. In the latter case, one is still playing—Uru players are interacting in a virtual world that represents an underground city, not in a literal, physical underground city. "IC" in this case means suspending disbelief in order to take the *setting* at face-value, but it does not necessarily mean assuming an assigned role such as might occur in a traditional MMORPG. This idea is supported by the fact that Uru terminology maps the acronyms "IC/OOC" to "In Cavern/Out of Cavern" as opposed to the traditional role-playing paradigms of "In Character/Out of Character"—the fantastical aspect of the game is the setting, not the people.

6.4.2 Conflicting Views on Restoration

Conflict about how exactly to carry out a restoration arose as the fan community moved towards making new content as well. One group applied their technical skills to gain as much control over the means of production as they could, and out of this tradition was born the ALCUGS project and the first fan-made Ages during *Until Uru*. Later, during MOUL, when Cyan took down their Kagi key authentication server[8], thus pulling

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8 According to T'alin, it is a widely-held belief that this decision was actually made by GameTap, who insisted on having exclusive publishing rights for Uru. Cyan had previously stated that they intended to keep the authentication server running for existing shards, though they would not be giving out any new Kagi keys.

the plug on the remaining *Until Uru* shards, some shard-owners "went underground" by figuring out how to run their servers without authentication. These activities were not, strictly speaking, legal under copyright law, although it does not appear that Cyan ever pursued aggressive legal action against these groups.

But another group of players stressed caution, patience and respect for Cyan's intellectual property rights. Cyan had always planned to eventually work out some system for allowing players to produce their own Ages that would somehow be included in the game, although they had not worked out the details of how such a system would work. Shortly after the cancellation of MOUL, Cyan announced that they would aim to release open-source Age-building tools. The players arguing for caution and patience asserted that while they supported fan Age-building, they believed that the process should be vetted and controlled by Cyan. According to T'alin, they were particularly concerned that any "underground" activities or "hacking" would result in Cyan revoking what privileges they had granted fans so far. Referring to community reactions, during the *Until Uru* era, to a team that wanted to build replicas of Uru Ages in other game engines, T'alin says:

> They were soundly rebuked and given short shrift on about any forum that noted what they were doing or even planning to do. There was an underground fear that anything that infringed Cyan's explicit restrictions on hacking or using their stuff would result in the removal of the engineering that kept the private shards licensed and running.

EL and LewisC describe tensions that arose between Cyan and the Age Authors Guild (AAG). According to EL's account, Cyan had previously indicated that they would distribute code through AAG, but began to have reservations about AAG's trustworthiness:

There was a discussion about what would be the most effective way to get the changes in the code to Cyan. [A Cyan employee] basically posted that the best way is to use OpenUru's repository, because Cyan doesn't trust the AAG people, because in past they used a hole in the game to make a demonstration of how a cracker could spread viruses with Uru.

The fact that Cyan gave its code to OpenUru instead of AAG in the end has, according to EL, created some tension between the two groups. LewisC suggests that there are underlying philosophical differences between AAG and OpenUru that may explain Cyan's choice: "They [AAG] have more of a loose cannon way of doing things than OpenURU. Cyan likes OpenURU better because they have a more business-based approach. AAG has a developer's approach and often seeks to push the limits."

Some conflicts seem to center on notions of authenticity, tied either to aesthetics or techne, or both. As Thomas is taking me on a tour of his extensive and intricate Uru-inspired builds in OSGrid, he notes that some in the Writers community have attempted to devalue these out-of-Uru builds, claiming them to be unauthentic. It is not clear whether this attitude is for aesthetic reasons—stemming from the fact that OSGrid does not exactly duplicate the look and feel of Uru—or if it is an issue of status and the value placed on technical skill. To address the former issue, OSGrid does not and cannot look exactly like Uru—not even where it replicates spaces from Uru itself—but the Camhanaich builders have nevertheless succeeded in creating spaces that have a fundamental "Myst-like" quality and aura. As to the issue of technical skill, it is possible that some Writers perceive the building tools in OSGrid as debased versions of professional 3D production tools, and believe that because OSGrid affords building in real-time while inhabiting the space (as opposed to the asynchronous build-export-playtest cycle of Uru Age development) it must therefore require less technical skill to

learn. These notions of authenticity, about what actually constitutes Writing, echo thematic conflicts from the Myst backstory. Two Myst novels in particular—*The Book of Ti'Ana* and *The Book of Atrus*—deal with the question of whether non-D'ni can be Writers. It turns out, in these stories, that they can and they do. However, D'ni society is not necessarily accepting of this fact, as some characters with a more traditionalist (or xenophobic) bent are incensed that non-D'ni would presume to try their hand at the Art, and regard the Ages those individuals write as aberrations.

In fact, the general pattern of conflict among Uru fans tends to suggest that real life mimics art. In the Uru narrative, Yeesha, the DRC, at least two opposing factions of the fearsome creatures called Bahro, and the cavern explorers (to a greater or lesser degree) find themselves at odds with each other about how any restoration of D'ni civilization should be carried out—if, indeed, it should be allowed to happen at all. The real-world question of how to go about restoring Uru as a game-world is similarly contested. However, one point on which most Uru fans can probably agree is that there should be *some* kind of restoration.

6.5 Clues, Cues and Conventions

As a result of the affordances of the tools available to Age-creators, in addition to a shared cultural language and repertoire of conventions, fan-created Ages reproduce many of the same spatial, puzzle and story-telling conventions established by the original Cyan-produced content. Cyan's own game design style is reflected in the artifacts created by fans. Taking culture to be a system of shared practices and meanings, I argue that the creation of new Ages and narratives by fans is shaped by a culture shared between producers and fans. Fans arguably engage in what Jenkins (1992) calls "textual

poaching," re-appropriating and re-interpreting canonical content for their own purposes. However, their actions might be more accurately as entering into a dialogue with Cyan and its canonical content. Fans are poachers, but not exclusively: many of the canonical conventions and narratives that they use are part of a system of practices and meanings that are already shared between both Cyan and its fans. As noted in Chapter 2, Cyan always intended for those meanings to be shared with fans, who were to have a part in driving the narrative and producing new Ages.

In this section, I consider how fans adapt, leverage and re-appropriate aspects of this shared culture in their own creations, both within Uru and in other virtual worlds. I examine four examples of the shared cultural repertoire being applied in fan-created Ages and narratives: the motif of the story-character's personal journal; the design of puzzles that involve reading and understanding space in certain ways; the adaptation of narratives to rationalize real-world events and migrations between different virtual worlds; and metaphors for understanding fundamentally different hyperspatial worlds in spatial terms.

6.5.1 The Journal in Fan Ages

The personal journal has always been a thematic fixture in the Myst saga. A key component in the original *Myst* game involved reading exploration journals written by Atrus, the enigmatic proprietor of Myst Island and writer of the many Ages that the player visits in the game. Each journal is presented as a series of on-screen images of an open book with handwritten text on each page. In each book, Atrus recounts his initial explorations in each Age, describing the environment and his initial impressions thereof. Some portions of the journals read like an informal documentation of scientific observations about the curious geology or strange weather patterns of a new world, while

other portions are ethnographic, describing the culture, language and rituals of the Age's inhabitants or recounting legends from their history. The journals were leveraged to provide back-story and thematic text to the game. They give the environment a greater sense of depth – an important task, given that, when explored, these Ages appear to be quite small and devoid of other people. The journals also served a direct and crucial purpose in that they provided, in the guise of a story or in the form of sketches and rough diagrams, necessary clues that the player would need to solve some of *Myst's* many puzzles.

The motif of the personal journal was not limited to providing story and puzzle information to the player, however. The *Myst* CD-ROM came packaged with a physical Myst Journal, a small staple-bound notebook with pages textured to look rustic and worn. Players of puzzle-adventure games often find themselves in need of a pencil and paper, to make maps of complex spaces or to record other important information such as the combination to a safe. The Journal conveniently provided the paper in a form that was woven thematically into the game itself – the player, like the characters in the game, could keep a personal journal documenting his/her explorations.

The tradition of providing the player with his/her own journal to write in has been sustained throughout the series, although in later games (including *Uru*) the physical paper version has been replaced with an in-game journal in which the player may type text (although this precludes the player's ability to include drawn maps and sketches along with the journal text).

The character-written journal has also showed up in all of the Myst games and serves the same purpose as it always has – a vehicle for back-story which gives the game

further depth, a substitute for the real-time character dialogue that usually drives plots, and a source of key information for solving puzzles. In Uru, dozens of journals in several different styles from different character-authors are found lying around. Many of these have a more modern visual style – ruled notebooks or spiral-bound volumes of typed pages, in contrast to the quill-on-bound-parchment style of Atrus's journals. These more modern journals are typically attributed to (non-player) characters who are members of the D'ni Restoration Council. Some are also translations or summaries of ancient D'ni histories and parables, and thus function purely in a story-telling capacity independent of the game's puzzles.

The journal convention has been carried over from canonical Cyan content into fan-made content, in part as a matter of maintaining one of the conventions that has always been an aspect of the unique character of *Myst* games, and in part as a matter of the affordances of the game engine. The engine already provides hooks to designers for displaying a readable journal to the player. The designer writes the text that is to appear in the book, and chooses from a small set of available visual styles and fonts. The text itself is rendered in-game on the fly using the chosen font (Adrael 2011). Although this does make it easier to include custom-written journals in fan-made Ages, that is likely not the original reason Cyan chose to implement journals this way. Rather, in a game that already has a large amount of graphical assets, many of which need to be transferred from server to player over the Internet, it is crucial to minimize the use of pre-rendered graphical assets wherever possible. Thus it is more economical to use a system which renders a journal from plain text rather than one in which each journal page is produced as an image ahead of time and stored on disk. One Age writer distinguishes between

"journals" made using a book template and "letters," which are usually individual loose

pages of text and may also contain images:

> [J]ournals are template-books with self-compiling fonts rendered on the player's screen as needed, while letters are generally pre-made as a graphic image. In order to keep the file size of these images small, they must be of fairly low resolution. This means that a journal can contain long texts, up to dozens of pages, but letters are limited to very short ones, a dozen lines at most. As any writer will tell you, writing a short text is more difficult than a long one, and the length available in Uru is challengingly short. (Adrael 2011)
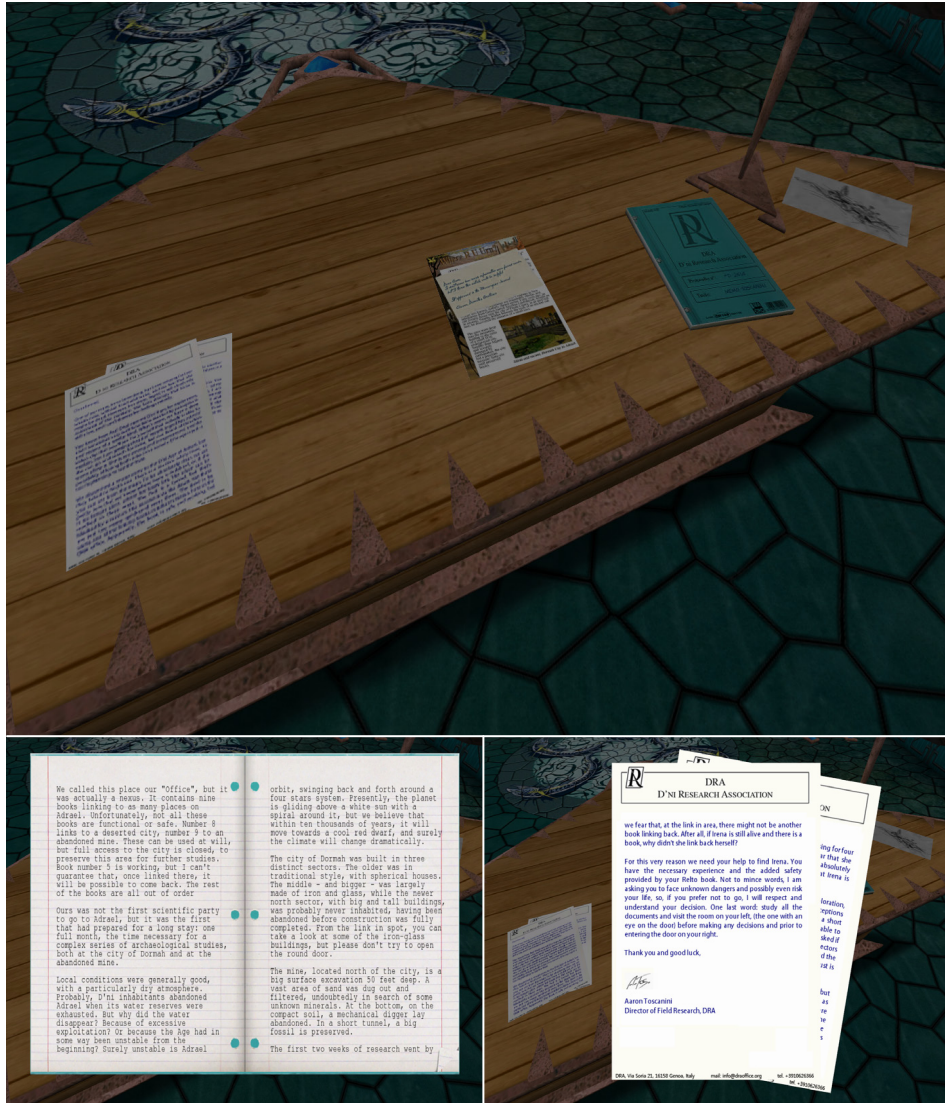
Figure 14. A comparison of journals and letters in the fan-made Age of Adrael. In the top image, the blue notebook on the table is a journal, while the loose leaves of paper are letters. The bottom images show what the player sees upon clicking on the journal (left) or letter (right) to read it. *Source: Screenshot by the author.*

Despite the challenge of writing shorter segments of text, the "letter" convention described is also well-established in the Myst tradition. One of the first artifacts that the player discovers in the original Myst game is a puzzle hint in the form of an urgent memo from Atrus to his wife, which is found scrawled on a piece of crumpled parchment lying on the grass. In Uru, because the journal system is not designed for displaying maps, diagrams and images, individual scraps separate from the journal serve as a way to provide such information to the player. However, as the above quote indicates, this design decision makes it difficult to make longer texts look like they were written as letters and memos on loose sheets, rather than pages in a bound notebook.

Uru fan Ages make extensive use of journals and letters. Often their use is accompanied by some attempt to make it plausible that someone's diary or memos would be found just lying around. It might also be considered somewhat remarkable and unlikely that all of the principle characters turn out to be conscientious diary-keepers who are apparently unconcerned with the privacy of their writings. Sometimes this is addressed directly in the journal itself: both the Adrael and Camhanaich journal texts contain examples of writers mentioning that someone else—a friend, or the leader of a research team—asked them to keep a journal. But as one writer asserts, the proliferation of journals is considered plausible in the context of Uru precisely because it is a convention already well-established in the series:

> I think that we scattered [the story character] Irena's letters along the explorer's path in a moderately realistic way. This departure from likelihood is accepted because of the very nature of Uru game playing. Information is discovered along the way, often after a puzzle is solved and a new area is reached. (Adrael 2011)

Most of the journals I encountered in my exploration of fan Ages were concerned less with puzzle solutions and more with telling a story, especially in those Ages where puzzles are absent, or where there are important past story events to relate, events that cannot be shown but must be told. As discussed in Chapter 2, Cyan sought to create a storytelling economy by performing live story events in-world, one time only. The news of such events was spread informally among players, but was sometimes also chronicled in DRC journals. Some of the momentous events that take place in the fan Age of Camhanaich (discussed later in this chapter) are tied to real-world events, so they cannot be re-enacted at will—these are chronicled in a collection of journals called the Camhanaich Story Book. Uru and its fan Ages thus communicate narratives in a way that differs from many traditional MMORPGs, in which events of earth-shattering importance are shown in automated, repeatable cut-scenes for the benefit of each individual player.

Story for its own sake, especially when presented in static, written form, might be considered as a weakness in a computer game because it is non-interactive, but it, too, seems to be accepted as a convention in Myst because of precedent going back to the first game. Myst players are apparently willing to accept that part of the story is presented to them in this form. Pearce (2008b: 20) finds that baby boomers, who represent the majority demographic of Uru players according to her survey, readily accept and even enjoy reading as an aspect of Myst and other adventure games.

Furthermore, journal texts do not exist in isolation from the game world but are inextricably woven into it: not only does the subject matter of the written story pertain to the explorable world, it is also in thematic parallel. The game tells a story – a Parable,

just as the game's pre-release title suggests – that bridges the gap between static text and interactive exploration.

Interestingly, the journal mechanic is so central and compelling that it carries over into other software platforms that do not provide the same framework to support it. In Uru, journals are visual, like images of actual physical printed pages (even though they are generated from a template), but in the virtual worlds of Second Life and OSGrid, it is wholly impractical to provide a readable journal in this same visual format. There is no book template, so the only way to make a visual journal would be to use pre-made image textures for each page of text – and the same problems of resolution that are encountered with Uru's letters apply here, only they are much worse as every single texture must be sent to the user over the Internet, and complex textures often take several seconds (or several minutes!) to load in full-resolution. An implementation of Myst-like journals in the Second Life engine would result in blurry text and a slow, frustrating reading experience. But the journal mechanic has nevertheless been adapted to the new platform, in the form of "notecards," Second Life's ubiquitous medium for asynchronous plain-text communication. Notecards are not physically rendered virtual objects; they are text files that can be displayed in a Second Life viewer and transferred over the grid. The Camhanaich Story Book, a collection of journal entries that details the destruction and partial salvage of the fan Age of Camhanaich, is found both in Uru as a traditional Myst journal and in OSGrid in the form of a plain-text notecard available from a dispenser. Thus the journal mechanic, an aspect of Uru design culture, is carried over to fan creations in Uru and other worlds.

6.5.2 The Spatial Puzzle in Fan Ages

To successfully solve – or design – Myst-style puzzles, it helps to have a working knowledge of a specialized body of practice that enables the formation of strategies for designing and solving. This is more than just understanding common puzzle conventions—it also means being able to understand a language of cues that inform the player's strategy for tackling a puzzle. Such cues constitute a language of conventions in which designers and players both become fluent, and which can be used by designers to communicate important information to players.

To illustrate, I address a subset of puzzles that have to do with how the explorer interacts with space in Uru Ages. According to Pearce (2008a; 2009b), experienced Myst players achieve spatial literacy and fluency in the game's spatial language. Expanding on that model, I argue that players understand space in certain ways because they are conditioned by this shared language of cues and conventions. Furthermore, the ways in which fan creators design puzzles (spatial and otherwise) in their Ages is shaped by this literacy of conventions.

Spatial puzzles and tricks have been a long-time fixture in Myst games. An elevator car in *Myst* has a control panel hidden on its roof, accessible only if the player thinks to try dashing out of the elevator after pressing the "down" button. *Riven* repeatedly uses the motif of deceptive double-doorways, where opening a door actually closes off a concealed side-passage. What these tricks have in common is that they use space in a simple but unconventional way, and they require that the players do the same. One would seldom think to try seeing what happens if one operates an elevator car while not onboard, because the conventional purpose of operating an elevator is to transport

oneself. Nor would a casual player think to close a door behind him just to see if it reveals anything that was hidden while it was open, because opening a door is usually seen as *removing* a spatial obstacle, not adding one. Once a player has seen enough of these sorts of puzzles, though, she starts to learn a new spatial language in which what was unconventional is now recast as conventional. Experienced Myst players have come to understand what it means when, for example, they open a door and it doesn't close automatically behind them.

More generally, as Pearce (2008a) has noted, players instinctively look for unusual ways to access or occupy space – as if their experience with the game has trained them to do so. In one of Pearce's examples of "playing space," a player in an Uru-based game of hide-and-seek exploits a collision flaw in order to hide his avatar inside a tree trunk. I observed similar behavior on a TUC field trip to the Age of Gahreesen, where a machine must be properly calibrated in order to activate an enormous gear, which then rises out of the ground to interlock with other gears – thus filling the gap in a vast mechanical system. Activating the gear requires a group effort, but at over a dozen explorers, the group was much larger than necessary, so someone suggested an experiment for the rest of us: finding out what would happen if people were standing on the gear when it rose up and started spinning. Although the result was anti-climactic – our avatars were simply moved off of the gear when it was activated – this activity provides a typical example of Uruvian spatial-hacking in action. It is precisely this kind of shared cultural practice of understanding and hacking space that fan Age-builders rely upon to inform their puzzle designs.

The fan-made Age of Adrael provides an example of Myst-like spatial conventions as well as the cues that act as hints to the player about what conventions are used. The explorer enters a network of subterranean caverns early on in the Age, and encounters a junction between three passages blocked by mechanically-operated metal doors. A wall switch next to each door allows it to be raised (opened) or lowered (closed). Since the explorer can easily operate the doors using the switches, the doors themselves do not seem to pose an obstacle.

However, the explorer soon realizes that all three passages appear to lead to dead ends or other obstacles that are, for the time being, impassible. There are windows onto other parts of the cave, and gates that can only be opened from the other side—details that tease the player by showing that there is still more space to explore but that it is currently inaccessible. This signals to the player that this area is not just a series of dead-ends, and that he is missing some crucial detail. These sorts of spatial cues are especially important in fan-made Ages because many of them are released in unfinished forms; a dead end might simply be the point beyond which the Age's author has not yet developed anything. Adrael's tunnel system must proactively give the user some spatial cues to suggest that there is still more to see here. The player now realizes that he is dealing with a spatial puzzle.

Solving the Adrael cave puzzle requires that one have some knowledge of the conventions used therein. One such convention is link bookmarking, a concept that was introduced in Uru but is not found in any previous Myst games. In the Uru core Ages, the player's primary objective is to locate and touch seven "journey cloths" hidden throughout each Age. The journey cloths also serve as a way to save one's progress.

While the main linking panel in a book always sends a player to the same landing spot at the "beginning" of an Age, the link books also provide an alternate link that will transport the player to the location of the last journey cloth he touched in that Age. Thus, the player can use journey cloths to bookmark a specific location so that later on, he will be able to link back directly to that location instead of to the default landing spot. Adrael's creators implemented a similar bookmarking system, using stations with KI-reading machines instead of cloths. The principle is the same: the link book to Adrael offers a main link to the Age's main landing point and an alternate link to the last bookmarked station.

However, bookmarking is more than just a means of saving progress through a space. As the player searches for a route to the unexplored portions of the maze, he may return to the junction with the three doors, and walking down the middle passage, find that it dead-ends abruptly with a bookmarking station. If he pays careful attention to his surroundings as he walks back to the junction, he will notice that there is a ladder attached to the back of the door. But since the door is raised open, the ladder is out of reach. He can close the door to lower the ladder, but since the switch is on the other side, he would still be unable to reach the ladder. He needs to find a way to be on the "wrong" side—the ladder side—of the door when it is closed. Of course, the solution is to bookmark the station on the ladder-side, close the door, link out of the Age, link back in to the bookmarked location and climb the ladder[9].

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[9] On the surface this may seem like a meta-gaming exploit, as link bookmarking is the closest thing Uru has to a save-game function. However, linking is seen as diegetic – books that allow transportation between Ages is a fixture of the narrative itself.

Figure 15. Adrael Junction Puzzle: this dead-end passage in Adrael contains a linking book back to the nexus, and a bookmarking machine (seen here on right-hand side of the image). The open doorway back to the junction is visible on the left-hand side, as well as the rungs attached to the back of the door. The explorer needs to be on this side of the door to climb the ladder, but can only control the door from the other side.
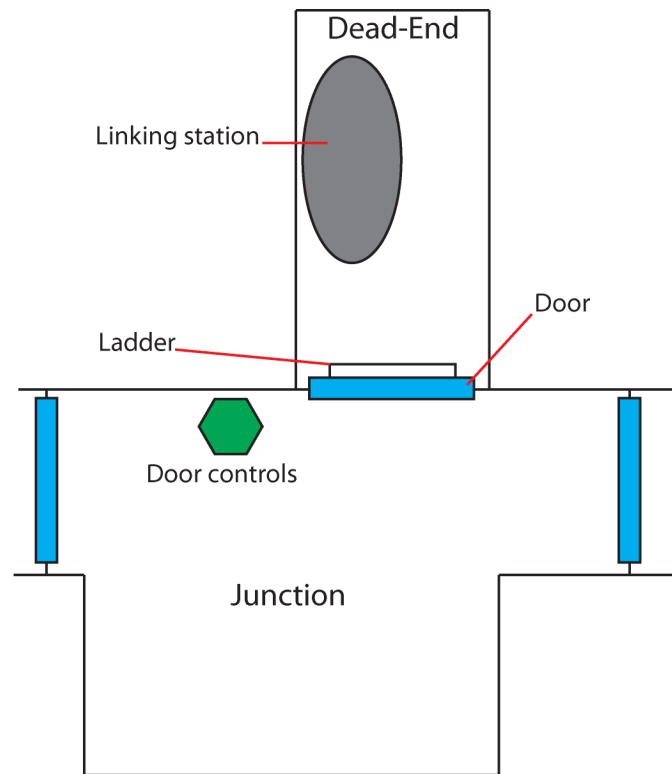
Source: Screenshot by the author.

Figure 16. Diagram of the junction puzzle in Adrael. *Source: Diagram by the author.*

The walkthrough provided on Adrael's official website shows how the Age's creators understood the thought process required to solve this puzzle. The walkthrough uses buttons to show and hide text, so that the solution can be revealed in a stepwise manner. The steps are:

1. The explorer realizes that he will need to search for an alternate (hidden) route through the maze. (The presence of doors that seem to open from the opposite side helps bring him to this realization.)

2. The explorer notices the ladder attached to the back of the middle door at the junction.

3. The explorer reasons that the door will need to be closed in order to reach the ladder, but understands that to close the door, he needs to be on the other side and will be blocked from reaching the ladder.

4. The explorer notes that there is a bookmarking machine in this otherwise dead-end passage and realizes that he can bookmark it, close the door, link out and return to the bookmarked link to access the ladder.

For the explorer already well-versed in Myst's spatial language, this stepwise reasoning is rolled into a single signifier. The veteran explorer who notices the ladder will immediately recognize this puzzle as an instance of a general type she has seen before, and will right away have some idea of what needs to be done. As one long-time player – who has never visited Adrael – comments, "As soon as you described the ladder [bolted to the back of the door] I knew exactly what the puzzle was about."

While Adrael uses established Uru conventions to create a classic Myst-style spatial puzzle, some fan-made Ages take Myst puzzle templates and apply a twist, while others represent a complete departure from the Myst style. The "Bridge Labyrinth" Age is one of the former. A maze of open-air, crisscrossing catwalks and stairways shrouded in fog, it borrows much from the underground tram maze in *Myst*. Both consist of junctions networked together by pathways, which always radiate away from the junctions at one of the eight points of the compass. The tram maze used sound cues to tell the player which way to go – for example, a bell chime meant "go north," a metallic clattering noise indicated "east," and both the chime and the clatter played together stood for "northeast." The Bridge Labyrinth uses exactly the same audio cues as hints to help

the player navigate the maze. However, it changes the means of locomotion from a tram that travels between junctions (without stopping in between) to walkways that the player has to actively traverse, and which come with an inherent risk of falling off the edge and having to start the maze all over again!

T'alin's Phaenoxos is also a spatial puzzle, but one unlike any seen previously in the Myst saga. The explorer wanders a twisty interior passage full of right-angle turns and straight vertical ascents and descents requiring ladders. The passage is not, strictly speaking, a maze since it follows a single, non-branching path, but the overall shape of the passage in three-dimensional space is of import for solving a logic puzzle therein. T'alin explains that he was inspired by the Snake Cube Puzzle, in which an unraveled serpentine chain of connected cubelets is coiled up in a specific way to make a single, larger cube. Although the explorer experiences the passage in Phaenoxos in a sequential fashion as a serpentine chain of small cube-like rooms, the path is in fact coiled into a large cube—in other words, the explorer is actually traversing the inside of the snake cube puzzle. Each cubelet has a number painted on the floor, and the painted numbers form the components of a logic puzzle, but in order to solve that puzzle, the player must be able to visualize how the cubelets relate to each other spatially, without being able to see an overview of the cube from the outside. At a glance, the snake-cube puzzle does not seem very Myst-like, but under further scrutiny it has much in common with the Uru core Age of Ahnonay, which also requires that the explorer be able to visualize a large superstructure when all he/she can see is a small part of its interior. However, where Ahnonay's solution centers on learning how to manipulate the superstructure as a mechanical contraption, the Phaenoxos puzzle is about reading a static space to discover

a logical relationship between its components. Phaenoxos presupposes that the explorer has the necessary spatial reasoning skills to work out the puzzle—a supposition that may be reasonable considering that explorers are likely to have prior knowledge of Ahnonay as part of a shared Uruvian cultural repertoire.
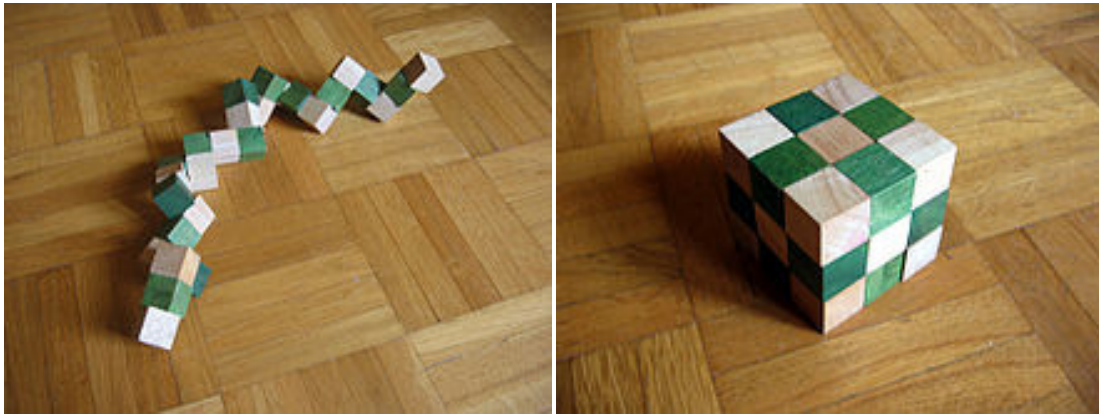

Figure 17. Snake cube puzzles, unsolved (left) and solved (right).
Source: Wikimedia Commons. http://commons.wikimedia.org/wiki/File:Snakecube_1.jpg
Used with permission under the Creative Commons Attribution-Share Alike 3.0 Unported license.
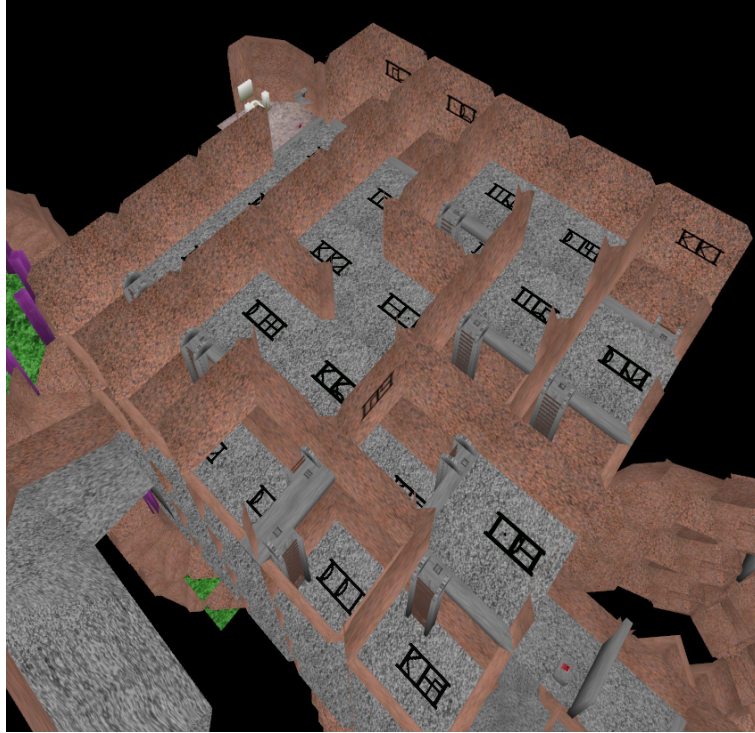
Figure 18. A cut-away view of a portion of the Phaenoxos cube maze, as seen from the outside (the player cannot access this view without using cheat commands).
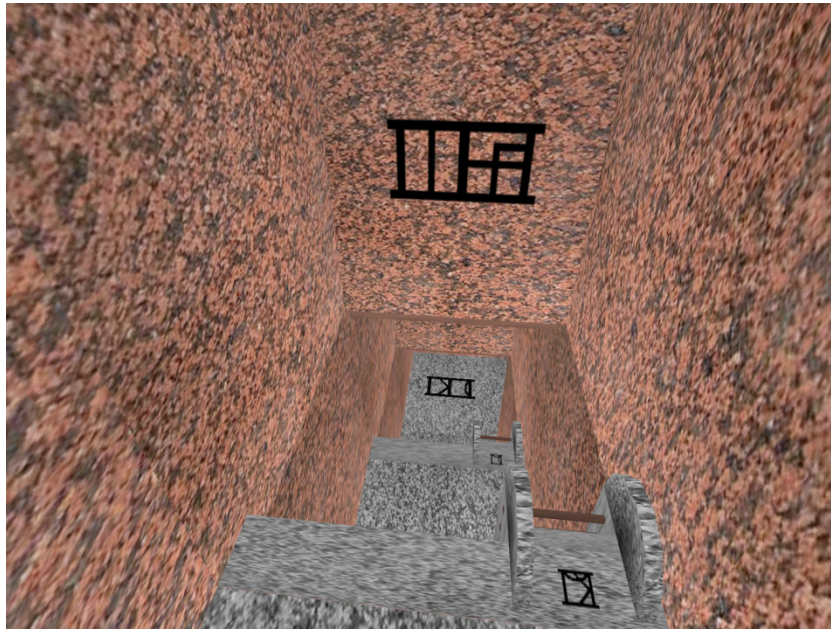*Source: Screenshot by the author.*

Figure 19. A view of a portion of the Phaenoxos cube from inside the maze.
Source: Screenshot by the author.

The design of fan Ages leverages a shared cultural repertoire of established Myst conventions. Many fan Ages presuppose that the explorer already has access to this cultural repertoire – that is, that the explorer is already experienced. Other forms of literacy also come into play in fan-designed puzzles. Some puzzles leverage a cultural literacy – an understanding of the culture of D'ni and of its modes of representation. For example, the use of audio cues in the Bridge Labyrinth arguably presupposes that the explorer has some prior knowledge of these sounds. The sounds and their associated meanings are part of a shared cultural repertoire of Myst fans. This does not mean that only an experienced Myst fan can solve the maze. The Bridge Labyrinth can teach the meaning of the sounds over time in much the same way that the original *Myst* tram maze taught them – by, for example, presenting junctions where the sound is a bell chime and the only possible direction of travel is north. However, the explorer who already has access to this cultural repertoire will be able to solve the maze more quickly because he/she will instantly understand the meanings of the sounds.

6.5.3 Understanding Non-Diegetic Realities Through Narrative

In modern MMOGs and virtual worlds, space manifests in complex ways. Countless multiplayer games make use of teleportation, whether it be point-to-point at-will transport or movement between specific portals—either way, different locations in the virtual world are connected in hyperspatial ways, not just by contiguous (virtual) geography. Players of MMOGs have also long been familiar with the convention of *instancing* play spaces (King and Borland 2003): a virtual world will have some areas that are common and shared by all players—such as towns and trading hubs—while the

areas where players go adventuring are instanced, so that an individual player or small group will have its own private copy of that play-space.

In a fantasy or science fiction MMOG, teleportation portals can easily be explained away as some kind of magic or advanced technology, and need not be given much more thought. They are little more than a means to an end. In Uru, instantaneous movement between worlds is the whole point. It is arguably the defining characteristic of D'ni civilization. As such it merits a closer look, one that examines not just day-to-day transportation between worlds but longer-term migration as well.

Pearce (2008b; 2009b) has documented the many inter-virtual migrations of Uruvians as Uru has repeatedly closed and reopened its doors. The first closure occurred in early 2004 when Cyan's publisher pulled funding for the project. Thomas describes how TUC members responded to the closure of Prologue by exploring and settling in several other virtual worlds—of which There.com and Second Life were two:

> We fought hard to find a new platform – looked for several, and There was found at the same time as SL. […] So there were two branches in the community […] But both did well. Just some ppl didn't want to do both. Understandable. I pretty much stayed with There. […] It wasn't about making decisions, it was about trying to keep the group together with some continuity.

TUC was only one of many Uru groups that migrated to worlds like There.com and Second Life. This set the stage for a multi-world Uru fan community. Some members of the community stayed primarily in one of the virtual worlds, while others were active in both. Months later, Uru universes were added back into this multi-world equation, as Cyan allowed fans to set up their own privately-run shards as part of the "Until Uru." According to Thomas, there were probably about 30 Until Uru shards in total, of which four were run by members of TUC.

But Uruvians were now familiar with the idea of having a community distributed over multiple worlds. More migrations had occurred over the course of several years, as noted in Chapter 1. Just as *Myst* provided the linking-book metaphor for understanding hypertexts and the immersive narrative holding power of computer games (Jones 1992), so too does the ongoing Myst saga provide metaphors for understanding virtual worlds. The Myst story is replete with examples of civilizations migrating as their home worlds are destroyed. Although one group of Uruvians in Second Life calls itself "D'ni Refugees," the Uru back-story tells that the D'ni themselves were refugees who arrived in the Cavern via a linking book from the doomed world of Gaternay some 10,000 years ago. Moreover, just as divisions occurred within Uru groups as they split off to go to different virtual worlds, so too did the people of Gaternay split: the majority of them went to an Age called Terahnee, while those who went to D'ni were a smaller splinter-group. Millennia later, D'ni itself fell to ruin as the result of social upheaval and a plague, the survivors of which took refuge in other Ages. The theme of worlds destroyed continues: most of the linking books in Atrus's library are destroyed by the villains in *Myst*; and *Riven* ends with the Age's inhabitants narrowly escaping to another Age called Tay, while the rest of their world collapses into a tumultuous void.

In short, the D'ni, like the Uru community, are accustomed to living in multiple worlds—separate but allowing for travel between—and like the Uru community, they also have a history of migration between worlds as old ones are destroyed and new ones created (Pearce 2009b).

This is compelling enough as a narrative and a metaphor that it actually works its way into fan-constructed in-character narratives that occur across multiple worlds. As a

means of giving in-character explanations for their activities across multiple virtual worlds, players build complex narratives that draw on the same themes of travel between worlds, of destruction and migration. The Camhanaich project provides an illuminating example. Here, an in-character narrative parallels and rationalizes the out-of-character narrative.

Camhanaich's founding members began working together in 2009—the year of MOUL's closing—in the There.com Uruvian community. Tia, a member of one of the D'ni guilds responsible for exploring new Ages, announced on the guild's forum the "discovery" of a new island chain in the far north of "another of the worlds to which explorers have dispersed." The discovery came while she was working to set up a guild outpost in this new world.

The new world in question is Second Life. The island chain, which was in fact created by Tia and others, was said to be discovered as a quasi-steampunk-Victorian community, already settled. The local name was "Camhanaich." Other members of the project were cast as current inhabitants, while Tia was the outsider – she had been a key member of the aforementioned guild during the restoration of D'ni. The Camhanaich narrative was intended as collaborative storytelling, which Tia hoped would "bridge the different worlds if at all possible."

Although they originally worked together in There.com, Tia and her fellow designer/ builder Hannah chose to begin their new building project in Second Life (SL). They explain that SL affords much richer, more expressive graphics and aesthetics than There.com, which they describe as a "cartoony" world of "cardboard cutouts." Myst has always been known for its visual and graphical appeal, so it makes sense that people

building Myst-inspired worlds would want to use a platform that offers high-quality graphics.

The key disadvantage of SL is expense: to own virtual land, one must pay monthly "tier fees." Camhanaich builders Tia, Hannah and Thomas have all noted this problem. SL became too expensive for Camhanaich. The builders began to migrate it to OSGrid, a virtual world based on an open-source clone of the Second Life platform software. In OSGrid, land is significantly less expensive.

As part of the migration, they made up a story, told through journal entries left lying around in notecard form in Camhanaich, and posted to forums. While most of the characters in the story were "played" by (that is, told from the point of view of) actual people (e.g. Tia wrote journals from Tia's point of view), some were alts[10] created solely for the sake of the narrative. The main Camhanaich village was modeled after the Channelwood Age from the original *Myst* – a forest of trees coming out of the ocean, with several tiers of wooden walkways and tree houses.

The journals tell of how a strange energy orb appeared in the tree village one day, and began to grow. What follows is an account of how the story characters studied the orbs to try to learn what they were, as a whole slew of other mysterious events started occurring. It came to light that Camhanaich is doomed – one character, who is a soldier in a vast futuristic interdimensional war, revealed that one of the factions in the conflict will need to render Camhanaich uninhabitable in order to contain the spread of violent interdimensional insectoids. This warring faction intended to shift the orbit of Camhanaich's planet such that global temperatures will rise over the course of a few

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[10] A term used in virtual worlds for an alternate character/avatar. Players will often have one "main" character and a handful of alts that they use occasionally for special purposes.

months to uninhabitable levels. (This is an interesting reversal of the fate of the fabled Gaternay, which became unable to support life when its sun failed.)

Meanwhile, the energy orb multiplied and increased in size. It seemed to be swallowing up portions of Camhanaich—the buildings, the trees, the walkways. Some brave souls touched the spheres, and found that they were apparently portals – with another world on the "other side." Moreover, objects that were swallowed up by the orbs seemed to be getting transferred over to this other world. The "essence" of Camhanaich was being preserved, even as the planet itself was doomed.

The ruin of Camhanaich coincides with the creators' decision to abandon the SL build; the transfer of its "essence" to this strange new world is the in-character rationalization for moving the content from SL to OSGrid. (It is not possible to transfer all of the content exactly as it is, especially if it contains material purchased from other users.)

The out of character events – the real world circumstances – have been reframed as part of an in-character narrative. There is also a precedent for this in the Myst canon. DRC journals found in Uru talk about the restoration as an actual archeological project taking place in the caverns beneath Eddy County, New Mexico, and contain some (perhaps tongue-in-cheek) mentions of a group of game developers who are making computer games based on the historical documents uncovered in the cavern. The Myst games exist in the Myst universe, where the fictional conceit holds that they are based on real events.

In Camhanaich, there exist many examples of an IC/OOC[11] duality encapsulated in a single online persona. Tia, for example, is both a real person who builds new content and tells stories in virtual worlds, and a character in the fictional world. IC/OOC duality is commonplace in virtual worlds wherever role-playing is involved, but Cyan also provided a precedent for this in an era before virtual worlds were popular, in the form of Cyan employee Richard Watson. He started as a designer and programmer at Cyan, working on a remake of *Cosmic Osmo* and then on *Riven*, but soon became the story expert—developing D'ni language, numbering system, history and culture. He was worked into the game fiction as Dr. Watson, a historian of D'ni culture who was working with the DRC. Since Uru's major story events were acted in real-time in the virtual world, the real Watson performed as his in-world alter-ego.

6.5.4 The Grid and the Lattice: Spatial Metaphors for Hyperspatial Worlds

Camhanaich is heavily inspired by Myst, and the Camhanaich storybook acknowledges the group's "obvious" indebtedness to Myst. But as Tia explains, Camhanaich is not understood as a place in the Myst universe: rather it is part of a multi-world universe in which Uru is also a part. Other areas of Second Life are also thought of as other worlds. For example, the journals mention that one of the characters has business in a place called Casterly, a group of steampunk-themed sims in Second Life.

Another thing that distances Camhanaich from the Myst universe is that the narrative does not revolve around linking books. Rather, such books are understood as only one of many ways to pass between different points in space and time. Linking books

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[11] In-Character / Out-Of-Character

are still used. Although LTVWs[12] generally allow people to teleport at will, from any point to any other, it is a common practice for multi-region estates to provide teleportation hubs with objects that the player can click on to teleport to various landmarks in the area. The object used to trigger the teleportation can have any appearance, so in keeping with its Myst theme and roots, the Camhanaich Hub in OSGrid provides about 20 different teleporters that look like linking books. But even in Camhanaich, the teleporters can take other forms, such as a Stargate from the science fiction franchise of the same name.

Uru and LTVWs use fundamentally different spatial metaphors to map cyberspace. An LTVW is a "grid" of square-shaped regions or "sims" of equal size. Each sim is 256x256 virtual meters and has a dedicated server CPU core to run it. Sims are often grouped together to form contiguous land masses, and avatars can walk freely between adjacent sims. Groups of sims may also be separated by oceans—grid-squares that do not contain anything and are not tied to a server, and thus do not exist except as negative space filling the gaps in between the actual sims. In both Second Life and OSGrid, there are large, central groups of contiguous sims that form the "mainland," and smaller groups on the periphery that are considered islands or island chains. The term "grid" refers to how the sims are laid out geographically, but it also carries connotations of being connected to a networked infrastructure analogous to the real-world electrical grid. Being on the grid means not just being physically located in a grid square, but also means being connected to a global infrastructure that provides communication services, personal inventory, financial transactions and more.

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[12] Linden Type Virtual Worlds, a term I use to refer to Second Life as well as its open-source clones such as OSGrid.

But where LTVWs have grids, Uru itself has a "lattice." The in-character explanation for the lattice is that it is a complex, poorly understood, ancient D'ni network technology that coordinates communication between KIs across multiple Ages. It also maintains access to the Nexus, a linking hub that explorers (and the D'ni before them) use to fast-travel between different regions of the cavern. The lattice is thus a type of infrastructure, but the metaphor is easily extended to describe the virtual space. Whereas a grid describes objects arranged in a regular, contiguous two-dimensional pattern, a lattice connotes objects that are separate but linked to each other in a network. This more accurately describes Uru, in which spaces are not contiguous with one another, but isolated, and connected via special links.

Figure 21 shows a map of a portion of the lattice. Each rectangle represents an Age. One-way links are shown with arrows, while two-way links are simple connector lines. Where two one-way links are shown instead of a two-way link, this is because the return link is found in a significantly different part of the Age from the link-in. Dotted lines show links that must first be "earned" (by finding a linking book while exploring another Age) before they can be added to the player's libraries for direct access from the Nexus or Relto. Instancing rules are also shown—e.g. there are global and neighborhood versions of Gahreesen. Most of the world is accessible from one (or both) of two hubs: the player's personal library in his/her Relto, and the electronic linking library in the Nexus. Links *to* Relto are not shown (except for the initial link from the Cleft) because players carry their Relto books with them and can link there from any Age.
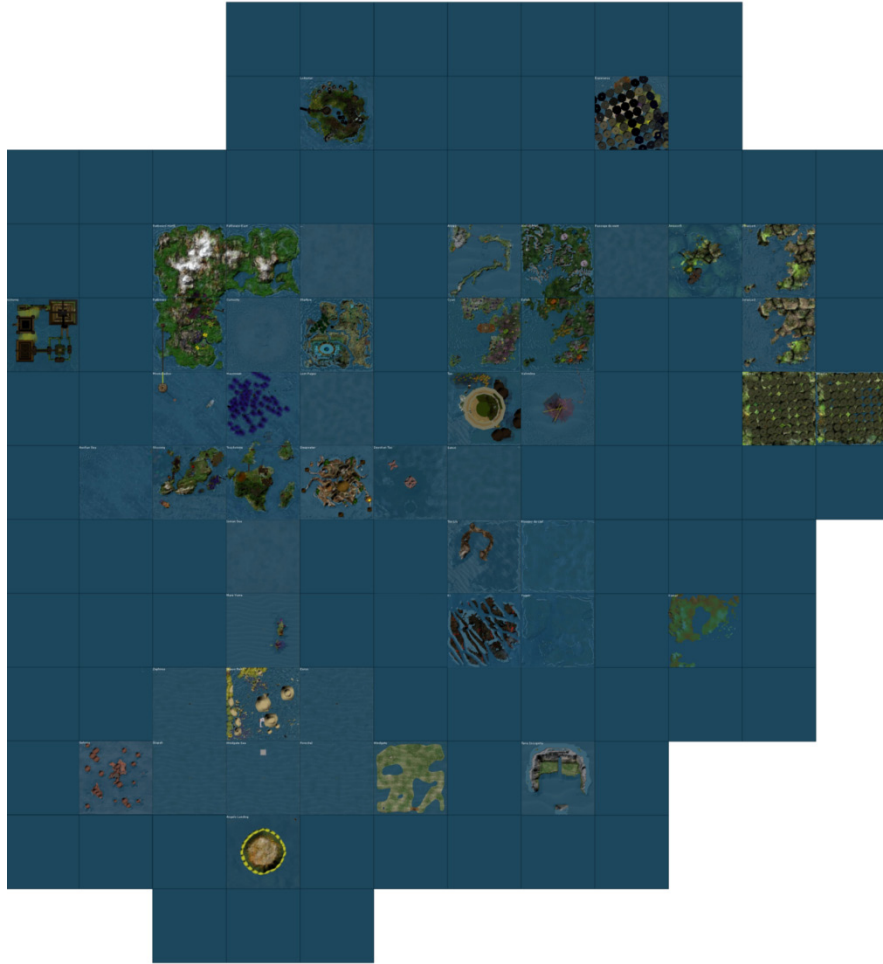
Figure 20. A map of part of the OSGrid world. OSGrid, like Second Life and other Linden-Type Virtual Worlds, uses a "grid" metaphor to map virtual space geographically. Each grid square is a "region" or "sim." Solid color square are empty or "ocean" sims and cannot be traversed, but otherwise sims are geographically contiguous with their neighbors. The regions shown on this map make up a part of the Camhanaich story-world. *Source: http://osgrid.org/ Image assembled from screenshots by the author.*
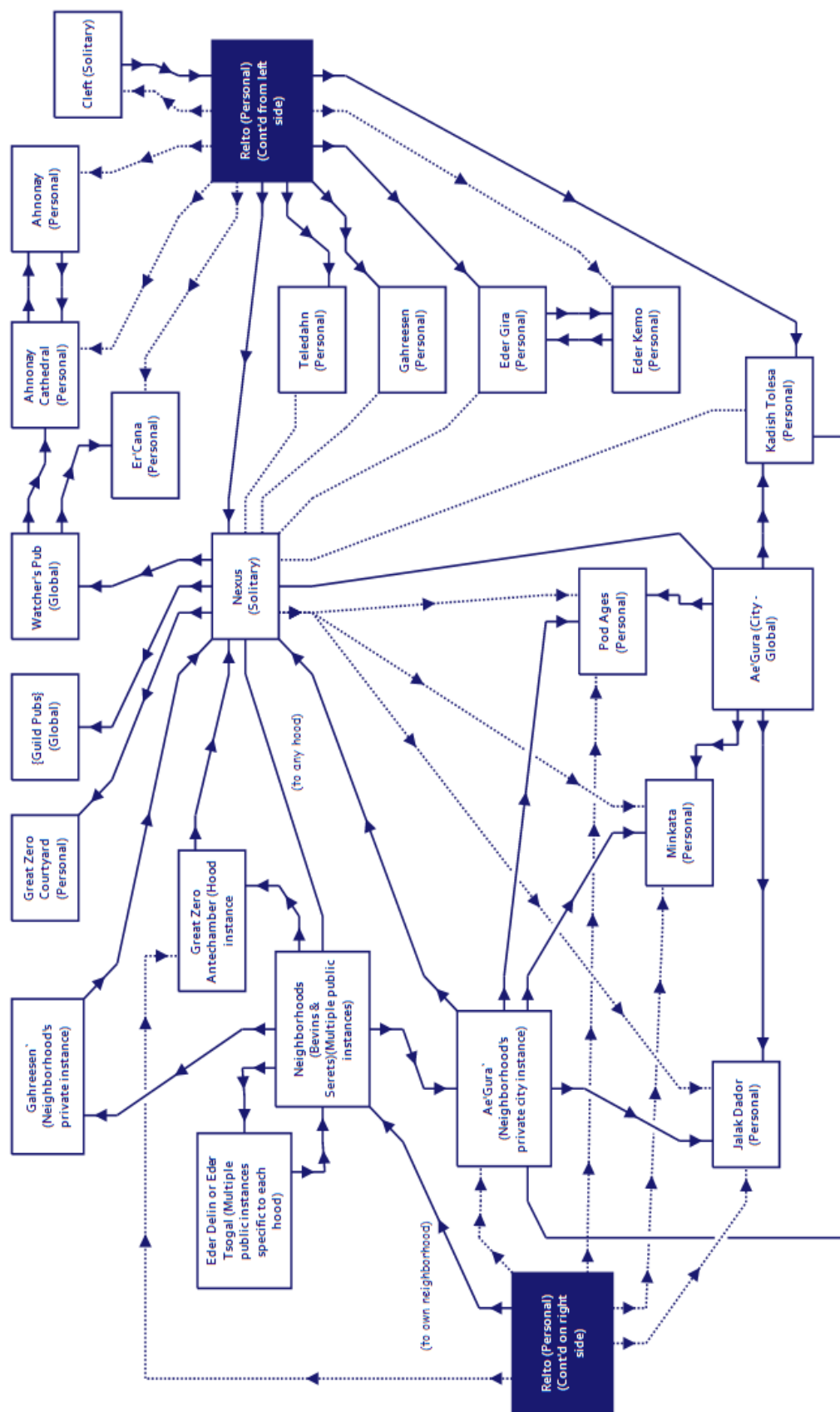
Figure 21 (previous page). A map of a part of the "lattice" of links in *Uru*, showing (some of) the possible linking connections between ages. *Source: Diagram by the author. Produced using Trizbort software: http://trizbort.genstein.net/*

Uru players must employ yet another kind of spatial literacy in order to "read" the lattice. Uru allows neither direct travel across contiguous space nor arbitrary point-to-point teleportation the way SL and OSGrid do. Getting from one place to another involves negotiating a path through a sequence of links. To complicate matters, the ability to use certain links is earned over time. Although the Nexus allows fast-travel between several different points in the cavern, those locations must first be visited and bookmarked. Each explorer keeps a personal library of links in his/her Relto, but these, too, must be discovered first before they are added to the library. For example, one of the Ages of Uru is a part of the island of Myst from the original game, but in order to reach Myst for the first time, the explorer must travel far afield through several Ages and solve several puzzles which eventually lead to a room with a linking book to Myst Island. Only after the explorer has discovered and used this linking book for the first time will it be copied to his/her library for convenient future re-use.

Yet another complication is that Uru Ages are instanced. For some Ages, each player has his/her own personal copy of the Age, where he/she can explore privately. All of the copies start out identical to one another (until the player makes changes to the environment, e.g. by solving puzzles), but they are distinct, separate spaces. Alice and Bob can both be exploring the Age of Teledahn concurrently and yet never run into each other, because they are both in their own personal copies thereof. They can only explore Teledahn together if Alice invites Bob to her instance (or vice-versa). Each player also belongs to a neighborhood ("hood")—somewhat like a guild or club in which members are united by a common interest or by participating in group activities with each other[13].

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[13] Common interest or group interaction is not necessarily an aspect of neighborhood membership. Unlike MMOGs where players start out with no group affiliation, Uru explorers are assigned to a neighborhood by

A hood is an instance of an Age that depicts a residential area of the D'ni city. There are dozens, if not hundreds, of instances of this same residential district, all more or less identical, but each one is shared by a different group. Ae'gura, the downtown core of the D'ni city, is a common global instance shared by all players, but each neighborhood also has its own shadow-copy of Ae'Gura, accessible only to the group. This is a design decision on the part of Cyan, because to control lag, it is necessary to limit the number of people who can concurrently occupy the same instance of an Age. Thus the global instance of the city proper has a population cap of 50 concurrent avatars, but if it is full, explorers may still use their own hood's instance.

The rules of instancing are complex and occasionally inconsistent. It is not always clear whether using a given link book will take one to a global instance, a hood instance or a personal instance. This poses a challenge for explorers who are trying to visit locations together. At the conclusion of the TUC field trip in Gahreesen, those who remained chose to use a linking stone we had found that would take us to the palace rooftop in Ae'Gura. However, since the Gahreesen instance in which we were exploring belonged to Tia, she had to "share" the linking stone with each of us for us to use it. While we all expected to end up on the same rooftop in TUC's own instance of the city, in actuality all of us ended up in the *global* instance, except for Tia—upon using her own linking stone, she was taken to the hood's instance of Ae'Gura. According to BV, the rest of us found ourselves in the global instance due to a bug/flaw in the way instancing is handled with shared linking stones. At the time, BV referred to the linking stone as "the sneaky way into the city." He explained to me later that he was referring to the fact that

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default, with the ability to change to a different neighborhood or start a new one. Common-interest groups tend to organize themselves as hoods, but hoods are not necessarily common-interest groups.

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the kind of instancing bug we experienced has been exploited in the past as a way for people to circumvent the global city instance's maximum player limit when major story events were taking place.

Getting to where you want to be, with the people you want to be there with, requires a thorough understanding of the idiosyncrasies of the Lattice and the instancing rules—and this example shows that even experienced explorers forget or misread them sometimes. On the other hand, those who understand how instancing works (and how it *fails* to work properly) can apply this knowledge to subvert the limitations of space.

CHAPTER 7:

CONCLUSION

7.1 Summary

The findings discussed in the preceding chapters yield four primary conclusions.

The first finding is that game development in the case of Uru was a deeply personal enterprise for its creators. As noted in Chapter 5, although Cyan's design process was informed by relevant research on player types and the different kinds of experiences they seek in games, many aspects of the game mechanics were filtered through the particular personality types of the designers. The personalities of the players turn out to be largely consistent with those of the designers. The creators also had specific philosophical goals in mind that became principles for motivating and guiding the game's design. Specifically, they did not set out to make a "puzzle game," but rather a compelling explorable space and a dynamic, participatory story-telling economy therein.

The findings discussed in Chapter 6 have shown how Uru fans were able to assert ownership over the story-world and the means of production of new content by proactively applying technical and problem-solving skills. These are the same sorts of skills that players must apply to solving puzzles in Myst games (Pearce 2009b). Uru fans seem especially likely to have these skills. Cyan's openness to fan ownership certainly had an impact: Cyan planned from the outset to move towards an open-ended, participatory system by which fans could produce new content for Uru—although they never worked out the details of this system during Uru's commercial life. Open-source tools recently released by Cyan give fans an official and fully above-board channel for

making new content, but in practice fans have already been able to hack together their own unofficial tools. It is unclear how the outcome may have differed if fans had encountered resistance to their cause, rather than sympathy, from the game developers. In parallel to the creation of new Ages in Uru itself, new Uru-inspired content has also been built using other game engines or in other virtual worlds like Second Life.

Fan participation in rebuilding and restoring Uru is contested (as discussed especially in Section 6.3), with conflicts arising over issues of roleplaying, aesthetics, authenticity, intellectual property and basic logistics. In an interesting twist, these conflicts parallel those of the story-world itself, in which multiple factions – Yeesha, the DRC, the Bahro – find themselves at odds over how (or if) best to restore the lost D'ni civilization.

Finally, this research has found that when fans produce new content, they draw significantly from an existing shared cultural repertoire of cues and conventions. These findings were discussed in Section 6.5. The conventions of fan content-design are supported both by the software affordances of the development environment *and* by cultural precedent—they are readily adapted to Myst-like narratives and are easily "read" by experienced Myst players (a type of spatial literacy similar to that identified by Pearce (2006, 2009b)). In other words, when fans become writers (or Writers, creating new Ages as the D'ni did), they apply the established practices of reading in order to shape their practices of writing. Story conventions such as linking books that serve as portals between multiple worlds easily become metaphors for understanding the virtual spaces in which Uru and Uru-inspired story-worlds are situated. In Uru-inspired spaces built in other virtual spaces like Second Life, conventions are imported for their narrative and

cultural significance, despite the fact that the software affordances of the new environment might not be suited to those conventions.

7.2 Future Extensions

Research in this area would benefit most readily from longitudinal extension to the developers of other games and virtual worlds (online and offline), especially those in which the fans are involved in some kind of creative synthesis with respect to the game. There remains the question of how unique the Uru situation is. Are game franchises as personally meaningful to most developers as Myst is to Cyan? Do other game developers share personality traits with their fan communities? Are the crucial factors in Uru's restoration – the initiative displayed by fans, and Cyan's willingness to hand over the reins – unique to Myst? Is it crucial that the game's story-world offer a narrative framework for rationalizing fan displacement and the production of new content across multiple worlds? These questions set the stage for a final question of even greater emotional significance to gamers and game developers: in general, when an online game fails commercially, can it be revived and restored as Uru has been, and if so, how? For a successful restoration, does designer and player culture need to have similar characteristics to those found in the case of Uru, or will individual games offer their own locally-meaningful strategies and solutions to restoration, based on their own designer/player culture? It is difficult to imagine traditional MMOGs going to open-source after they are retired from the world of commercial viability: it seems unlikely that Sony would ever consider releasing the source code for EverQuest 2 and telling fans to "go make worlds!"

Many aspects of Uru's situation are uncommon, which could pose a methodological difficulty for comparative studies. My original research approach entailed a plan to spend several weeks as a sort of resident ethnographer at Cyan, to observe work practice over time and get a rich, inside perspective – similar to Malaby's (2010) study of Linden Lab. But Cyan is not the lively, bustling place it once was during Uru's development. There is not enough day-to-day data to support an extended project like Malaby's. Future research should, if possible, seek the resident-ethnographer approach. This creates an interesting methodological paradox: if games must be commercial failures in order to become the subjects of fan restoration efforts, will there be enough ongoing activity at the game developer's studio to justify an extended research study there?

To complicate matters, smaller game developers are constantly being bought and sold—along with their intellectual property (IP)—by large corporations. This tends to stall restoration efforts, especially as the new owners have no personal attachment to the game and are thus less likely to be responsive to the requests of fans who wish to undertake revival efforts. For example, *The Silver Lining* (Phoenix Online 2010) is a fan initiative to produce a sequel for the once-popular *King's Quest* series of adventure games by Sierra Entertainment. Sierra no longer exists and its IP has passed through multiple hands over the years, requiring continual re-negotiation with often-apathetic copyright holders for permission to continue working on *The Silver Lining*[14]. Although Roberta Williams, Sierra co-founder and creator of the original King's Quest series (essentially Sierra's version of Rand Miller), has expressed enthusiasm about the

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[14] The effort was ultimately successful, as the game's first "episode" was released in 2010 and Episode Five is currently in development (as of May 2012).

project[15], she lacks the kind of decision-making power over King's Quest that Miller

maintains over Cyan's IP. The fact that Cyan is privately-held may have been one of the

key factors in the success of the fan restoration, not just because of Miller's observation

that Cyan has no obligation to turn a profit, but also because the IP is not as vulnerable to

becoming lost in a shuffle of corporate takeovers and re-sales. From a methodological

perspective, this also facilitated my research, since unlike Sierra, the studio I wished to

study still exists. Nevertheless, a study of Phoenix Online and *The Silver Lining* would

make for a logical continuation of work in this area, especially since Phoenix Online has

become a game development studio in its own right, with its own original products.

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[15] Williams is quoted on The Silver Lining's website as writing, "This game is very true to the original series … . I found it beautiful and fun to play. I, too, like many other fans, would like to see how this story unfolds!"

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