Chapter 4

Material Culture of the Immaterial

Introduction

Archaeology traditionally deals with the artifact and its wider contexts as it relates to other artifacts found with/near it. The artifact's physicality makes it easy to comprehend as a "thing," something that was once created/manipulated by people, and upon discovery is manipulated again, this time by archaeologists. Even though the purpose of the artifact might not be readily apparent, its "thingness" is readily understood prior to further analysis to determine its true nature of creation, use, history, and ultimate deposition.

One can easily get lost in objects without considering maker-cultures. Karl Marx noted this danger of reification, summarized by Hodder: "Objects created by humans become so separate that they are perceived as having an external reality and an origin separate from themselves. . . . Objects have autonomy, deflecting societies' ability to be critically aware" (Hodder 2012: 32). Archaeology can fall (and at one point had fallen) into the trap of the fetish-artifact. We see this in modern media representations of archaeology where it is a treasure hunt, a quest for the shiny, elite goods. In these instances, material things are more important than ideas. Marx reappears, as noted by Johnson, defining history as growth of human productive power, and the modes of production as being the forces of production and social relations of production (Johnson 2010: 95). Therein lies a conflict of the formation of society dependent on the things it produces, separating production from humanity itself. There is more to archaeology than the object, and there is more to the object than the surface that can be seen and touched. Most artifacts have something to teach one level below the surface. This is especially true of video games.

To get to the software held within the media-artifact, we need to start with the artifact itself. As Buchli writes, "Engaging in immaterial practices almost always involves the manipulation of our understand-

ing of our senses in relation to the material. The immaterial is often a radial effect of our manipulation of the sensorium—such as the rendering of sight separate from touch" (Buchli 2016: 5). Once discovered, the immaterial can also be interacted with. It has its own internal narrative of how it became created and embedded within the media like some genie imprisoned in a magic lamp.

The game-artifacts and the game-spaces held within them add to modern material culture of games and gaming. Johnson defines material culture as being like a text: (1) it can mean many things to many people who read it in different ways; (2) meanings can be actively manipulated (which is often unspoken); (3) there is no single right or wrong meaning of reading a text; (4) the meanings of a text are outside the control of the author (Johnson 2010: 109–10). This interrelation makes for interesting archaeology because of the countless ways people interact with the things they create/use. Hodder refers to these contextual relationships as social biographies (Hodder 2012: 33). These social biographies include the creation and use of objects, but they also introduce the intangibles of memory and meaning: We went to the arcade on a date. We played *Centipede* together. We remembered how to use the controls. But we also remember that the evening was not about the game or the gameplay; it was in the wider context of friendship. The game exists in its physical reality, but it is also a symbol. But as DeMarrais, Gosden, and Renfrew wrote, "The symbol cannot exist without the substance, and the material reality of the substance precedes the symbolic role" (DeMarrais, Gosden, and Renfrew 2004: 25).

Archaeologists know that things have multiple dependencies. In Hodder's book *Entangled: An Archaeology of the Relationships between Humans and Things,* he devotes the entire third chapter to the notion that "things depend on things." Objects are beholden to operational chains and sequences, and are dependent on materials, functions, and time. Things also depend on people in order to be useful, these human-made artifacts entrapping people in "long-term relationships of material investment, care, and maintenance" (Hodder 2012: 67). This is as true of taking care of one's computer or console as it is of taking care of one's character in an MMO. The avatar is as much a possession and investment (or arguably more so) than the hardware used to play it. As MMOs continue to update with expansion packs and later versions, the level caps increase, there is better loot, armor, and weapons, and also more lore to explore. Sometimes playing these kinds of games feels like a full-time job, even though one's avatar is an on-screen manifestation of player intent. The avatar is a dumb thing until interacted with, and it requires continual attention if it is to remain viable in-game.

This virtual interaction with a game is only possible (at least at this writing) through an object, in this case a computer, console, or handheld device. Interaction is a process (Harvey 2013: 57). This process of interaction, of use, begins to add layers of meaning and history atop the original artifact. Objects and materials come to carry the weight of human history (Harvey 2013: 60). The constant risk, however, is losing that human history embedded in/on the artifact. Everything trends toward a state of entropy. Things fall apart. When the artifact is gone, does anything remain of use to the archaeologist? The archaeogamer can continue to interact with software on preserved media and machines, but there will come a time when both are gone and all that is left are quantifiable data and memories/emotions.

While we have the material to study, however, we should take advantage of it. The materiality of a thing embodies its own power (Cole 2013: 70), comprised of more than just objects and machines, but of the raw materials and waste that went into that object's manufacture (Parikka 2012). Without the material object, there is no interaction within the game-space. "The thesis that digital media are immaterial is premised on ignorance of how things work, carefully calculated in the guiltless consumerism of which digital media have become both vehicles and examples" (Cubitt 2013: 136). Cubitt adds that "the last great challenge to network archaeology will be the physical ephemerality of electronic media" (Cubitt 2013: 145).

The ultimate demise of hardware will not destroy the code left behind, which will exist so long as many copies are stored in many places both locally and online. We will be left with previously unthought-of questions regarding the games we study. Guins asks now, "When is *Space Invaders*?" and "Where is *Space Invaders*?" (Guins 2014: 12). Can we understand a game without a time or a place, or when that space-time is known but is no longer accessible? A video game can be studied on its own apart from the context of its original hardware and its original placement in time, but only when studying the game on its own internal workings in how it creates its own internal environment for human interaction. There is the material culture surrounding the game, but the code of the game creates its own, internal material culture, which has its own context and layers of meaning when actively played. The game-as-played is timeless.

The following sections will explore the material culture in games, paying special attention to the line between the natural and the synthetic and how things cross that line with regularity, reproducing the synthetic in the natural world, and introducing elements of the natu-

ral world into the synthetic game-space, a kind of transmigration of artifacts.

Material Memory in Video Games

"Material memory" can mean: (1) things (e.g., a pot, a building, etc.) provide a link to the past, an articulated/manufactured memory of what was that persists in the present, and (2) an actual memory triggered by interaction with a thing. When I visit my brother, I see the *Star Wars* toys I received for my sixth birthday, which his kids now play with. Holding the Luke Skywalker action figure triggers my memory of opening the present, taking the figure out of the box, activating the plastic lightsaber (and later learning how to remove it, promptly losing it). When I visited Athens for the first time in 1996, I walked among the ancient buildings atop the Acropolis. I had no real memory of these structures (aside from all of the data learned in school), but the buildings persist through time, a tactile memory of what was. So how does this work in video games?

Dunstan Lowe wrote about ancient architecture in games, "Always Already Ancient," where he notes that most games present Greek-y, Roman-y, Egypt-y buildings as weathered and time-worn (Lowe 2013). They rarely (if ever) appear as new. I see these buildings as representing a presumed past that never really was. It's a design choice, hinting at a lore to be written. In game design, the present writes the past. For simpler games (such as *Paper Mario* and *Mario Kart* and the Dry-Dry Ruins), the ancient is used as a backdrop created to evoke a sense of an older time while players negotiate the present.

The ruins-as-pictured are not from the ancient past (even though they reference an imagined past via design tropes). The ruins-as-pictured date to 2008, which in game-life is somewhat old. When I go back and play *Mario Kart Wii,* the ruins-as-pictured not only evoke an Egypt-y place that might have been (but never was), they also trigger a memory of the first time I raced this special course, and of the best run I ever had. *Mario Kart Wii* has become a material memory, the game itself a monument of the past that is played here in the present.

Let's look at another example: the Mace of Molag Bal from the *Elder Scrolls* universe. I acquired this weapon (a "Daedric artifact") by completing a quest chain (series of related missions), and I have enjoyed griefing my enemies with it. The material artifact of the mace contains robust lore of its initial forging and later use, a memory of the second and fourth eras of the *Elder Scrolls* canon. It is material memory of

that bygone era. What I didn't know (at the time) was that the mace is available to players who complete other quests in earlier *Elder Scrolls* games (including *Daggerfall, Morrowind,* and *Oblivion*). In the game lore's terms, the mace is an ancient artifact. In terms of the absolute chronology of the series, the mace is evocative of CE 1996, 2002, and 2006 respectively, its initial creation courtesy of Bethesda Softworks in 1996. So the mace is the material memory of the second *Elder Scrolls* game.

Things get even more interesting/weird when you consider the fact that you can (as I did) play the *Elder Scrolls* games out of order, playing games made in 1996 but in the present, 2018. Material memory gets confused a bit, especially since I will remember playing the game in 2018 even though it was released in 1996, evocative of that time. I will remember the mace from one time period, but in a later version of the game (therefore a different time period). I am remembering something from the future, when considering the lore, yet I am experiencing the artifact in the present when I play the games out of order. There is then a web-of-material-memory instead of anything chronological, with the Mace of Molag Bal at the center of that web, its presence radiating out across all timelines and narratives, a kind of digital singularity. This is not unique to the experience of gameplay but is one of many examples of items found in video games that are tied to lore of manufactured antiquity, and also to present and future interaction through play. More strangeness: there is more than one of these maces; there are millions, one per player-character who ever experienced the game. This artifact is unique to me, but not unique to the player-community; yet we all have shared memories that this unique/not-unique artifact evokes.

Moving away from 100 percent–designed games, video games set in synthetic worlds, specifically those that are procedurally generated, exhibit a unique kind of material memory: there is none, at least not at first. As I travel over the brand new, procedurally generated landscape of a world I discovered in *No Man's Sky,* I note that the planet is perceived to be billions of years old but has in reality only existed for a few seconds upon my arrival. Walking the new landscape of this new-old world, I discover a building of indeterminate age. That building is also brand new. It has/exhibits no material memory. I actually create that material memory by observing the building for the first time. I can use the building for geolocation. The next time I see the building, I will remember it. I know its age because it appeared as soon as I saw it, which, when you think about it, is an utterly bizarre statement. Would it have appeared if I hadn't seen it? Probably not, based on the PCG algorithms in play that are tied to player agency. In a game such as *No Man's Sky,*

I make the landscape by observing the landscape. I make the building by observing the building. I remember the building because I made the building (with the unconscious help of an algorithm). I wonder then if this is what happens with new architecture, that material memory has as a starting point that can be traced back in time. The landscape remembers the footprint of a structure, of a site.

Concerning player-memory in MMOs, specifically *World of Warcraft,* do games such as *WoW* "remember" players? Likely not. As many years as players invest in that game-world and in their toons (avatars), those players leave not a material trace on their respective servers. Nothing they crafted remains in those worlds. They built no monuments. The world persists, but its occupants remain anonymous. They are small things, forgotten. For players who quit the game, their toons might have been scrubbed from the servers by Blizzard Entertainment based on their inactivity and cancellation of recurring billing. Unless a player has screenshots of their toons, it is possible that they will disappear without a trace either after quitting the game or after the game itself is retired by its developer.

When I played *WoW,* I remember when I hit the level cap of 80 I celebrated by returning to Bloodhoof Village where I began my adventures. I wanted to see the village Elders, to listen to the ambient sounds. The NPCs failed to recognize me as the prodigal son returned home. I was without place, not even remembered by ones I'd considered family so long ago, digitally homeless and alone in a world of millions. Just like everyone else.

Video Game Museums and Museums in Video Games

When talking about archaeology, one must consider the disposition of post-excavation artifacts. Where does the stuff go? On a modern, working excavation, excavated material can end up in a rubbish heap, in the lab, or in storage. Some excavations (like that of the Athenian Agora) have on-site public museums featuring the best (or most representative) items discovered. Unfortunately there is still the practice of looting and of clandestine excavations that bring illegally recovered artifacts to both private and public collections.

For those archaeological artifacts that do make their way into museums, what is their purpose for being collected and for potentially being displayed (no museum exhibits all of its collection)? And what is the purpose of the museum? Whom does it serve, and why? With video games, there are both real-world and digital museums offering their

own interpretations of what is desirable to collect and display, and how the public in both the natural and synthetic worlds perceives not only the function of museums but also their role in interacting with, and even supplying artifacts to, these collections.

Terrestrial Video Game Museums

Video game museums (or video game exhibits in museums) have been slowly creeping into public view as the generations mature who grew up with the technology, have children of their own, and want to remember what the old games, consoles, and cabinets looked like and, in some cases, what it meant to play them. In another fifty to sixty years, those of us who recall playing the first arcade cabinets will be gone. These games and their related hardware comprise the material culture of people who grew up in the 1970s, the first to play in bars and arcades, and the first to own home gaming systems. For many people, a console became as essential as a VHS machine or a Walkman portable listening device, entertainment technology to be used on demand.

To understand material culture, one has to look at cultural meanings (Johnson 2010: 66). The museum exhibits and museums themselves attempt to do this, integrating didactic signage with "original" mass-produced gaming objects and prototype artifacts from pre-game development. Media technologies have, in differing ways, been elaborated as a condition of the modern mode of perception (Parikka 2012: 34). Museums can fall into the trap of nostalgia, treating game media and their design and even their promotion campaigns and package as practically quaint. We imagine what the 1980s were like (largely thanks to John Hughes movies and throwback television series such as *Stranger Things*), even those of us who lived through that decade. Tropes compete with actual recollection, and museums run the risk of almost taking a superior, colonial view of now vs. then, modern us vs. what we were thirty years ago, assuming that with age comes progress and refinement. As we see when considering the construction of the pyramids of Egypt, we cannot comprehend the technology and skill used to create such monuments. The same could be said of how the first video games were created, and of the creativity and ingenuity required to make something both new and lasting. Sometimes we perceive what we imagine instead of what is physically in front of us.

With video game history, container becomes content. Game ephemera, boxes, ads, and documentation are all collectible. They have value (Guins 2014: 173). Atari cabinets (furniture) sold in either 1984 or 1985 to collector Curt Allen contained, unbeknownst to the seller, design

diagrams, graphics, and artwork. This ephemera was ultimately valued by Sotheby's at $150,000–250,000 in 2007, but did not sell (Guins 2014: 167). These materials give context to the games themselves and are part of the overall gaming experience of a certain era. They give an authenticity to the exhibit. Authenticity depends on the context of the observer (Holtorf 2005). It carries its own definition and baggage for every visitor as well as every museum that chooses to display items from video game history. History and museums play with the idea of memory, specifically cultural memory. As Holtorf proposed in his 2005 talk with Angela Piccini, "cultural memory . . . ought to be based on a notion of absence and not on some poorly preserved remote sites and rusty artefacts. Less preservation could be more memory" (Piccini and Holtorf 2011: 23). In this case, perhaps less is more, letting the objects stand on their own as artifacts without all of the nostalgic accoutrements. For those of us who can remember, we will note what is missing, which adds gravity to what has been preserved and presented.

When museums do decide to display video games, they should consider three things. The first is to follow the lead of the National Museum of Play's triangular model for curation: artifacts-interpretation-interactivity (Guins 2014: 43). Not only is it important to have the object but also to provide it (if possible) within a playable context. The game cannot be separated from the hardware on which it was played. *Jet Set Willy* by Matthew Smith has to be played on the Sinclair (Stanton 2015: 74). MAME emulators (software that ports arcade games to other platforms such as personal computers) can suffice to some extent, but there is no substitute for learning how to play a game using the original controllers. Players now experience the same learning curve as players back when the game was produced. Lastly, museums should forget about chronology and diffusion and think more about the processes involved (Johnson 2010: 33, paraphrasing Renfrew). How did these games come to be, not only in the act of creation but also in the act of play? Games are kinetic by design, their meanings made more clear when interacted with on a screen.

To begin with the natural world: In 2016 there are already a handful of museums featuring video games-as-artifacts (Detroit's Henry Ford Museum) or as art (MoMA in New York City), while others such as the National Museum of Play (Rochester, New York), the Computer History Museum (Mountain View, California), the National Video Game Arcade (Nottingham, United Kingdom), and the Powerhouse Museum (New South Wales, Australia) have several exhibits (or in the case of the National Museum of Play, an entire floor) dedicated to games and gaming. The most recent brick-and-mortar museum committed solely to video

games is the National Video Game Museum in Frisco, Texas. The first video game–only museum, however, is in the heart of Rome: Vigamus.

Vigamus, Rome's Video Game Museum

Most people when they visit Rome head immediately to St. Peter's or the Roman Forum, especially if they can only spend a few brief hours in the Eternal City. For others (including myself), the first stop is Vigamus, Rome's video game museum, and the first museum in the world to exclusively focus on interactive games (see Figure 4.1). Vigamus is about a half mile from the Lepanto stop on the Metro A-line just off the Piazza Mazzini on Via Sabotino. The museum's unassuming orange sign gives a hint of what treasures lie one story below street-level. The

Figure 4.1. Inside Vigamus, Rome's video game museum. Photo by the author.

joyful noise bubbling up the steps is a mix of chiptunes, shouts, and laughter. Upon entering, the visitor is met by life-size figures of Lara Croft and a Templar from *Assassin's Creed.*

Vigamus is divided into several sections, all of which have incredible things on offer. The first cases highlight the hardware and first video games ever created, many of which are hand-signed by their creators. The earliest Atari consoles are on view, as are various Commodore and Amiga computers. First-generation consoles from every major manufacturer are here as well as a selection of the games that defined genres. The signage is in English and Italian, and many of the cases feature looping video interviews with video game luminaries.

Copies of *Zork* sit across from boxed copies of *Monkey Island* and *King's Quest.* There is a case dedicated to *Doom.* Other cases include hardware from Atari and Intellivision and others, the earliest consoles on the top shelf. Handheld game systems of every variety are positioned next to sample games: back then one could not play the games without the appropriate gear. The pairing of hardware with software gives context to younger visitors and reminders to older ones.

The next room is dedicated to the fabled "crash" of the video game industry in 1983 that saw the fall of Atari and the rise of Nintendo. The centerpiece contains several cartridges, manuals, hardware, and comics, as well as dirt from the Alamogordo landfill, site of the Atari Burial Ground that I helped excavate (see chapter 1). Being reunited with that material felt good, and I am glad that Vigamus is one of a few museums that has this material on display. The exhibit explains the myth of the crash, the story of the *E.T.* burial, and that of its recovery.

Down the hall and around the corner is a room of playable games on original systems. One can play *Doom* on an original first-generation PlayStation (even though my first experience with the game was via MS-DOS on a PC clone). In the connecting hallway are cases full of *Mario Bros.* cartridges, a history of that franchise behind glass. Other cases contain other favorites of mine, including the *Half-Life* series of games.

Ubisoft sponsors the next room, which is full of *Assassin's Creed* game art as well as several stations for playing the games, a constant LAN party. The room is full of kids, all wearing museum-provided gaming headphones. The sense of enjoyment is palpable.

The biggest room contains a setting for traditional lectures, and off to the side are several arcade cabinets, including the very first cabinet for *Space Invaders* with the instructions in Japanese. Playable history.

Vigamus sports an Oculus Rift room, which has state-of-the-art OR hardware donated prior to the Facebook buyout. The room contains two complete OR setups with chairs and hardware, as well as screens to show others what the player is seeing. The applications for archaeogaming with OR and augmented reality are quite real.

Although Vigamus was the first video game museum to open, it is not representative of other museums' approaches to collecting and displaying video games. At the Henry Ford Museum, the Atari artifacts are displayed as an example of twenty-first-century archaeology within the context of the history of technology in which this museum specializes. The National Museum of Play features video game cabinets in an arcade-style context to encourage engagement and interaction. Representative artifacts of video game history populate cases surrounding the interactive space, reminding visitors of the evolution of play in the late twentieth and early twenty-first centuries. Behind the scenes, however, is an extensive archive to video game history, and hardware in various states of restoration. The museum is a gathering place for sharing oral history and knowledge, for conservation and preservation, as well as communication of history and research to the public. Museums such as the Strong and Henry Ford are not just one-dimensional avenues of public-facing displays of gaming technology and art. Robust research is at the heart of the permanent collections. So do museums created within video games do the same thing?

Museums within Video Games

Seeing video games within a museum context, with traditional vitrines, signage, and interactive displays containing artifacts less than sixty years old led me to wonder about the reception, use, and interpretation of museums within the games themselves. What did they look like? What artifacts would they contain and why? Do these museums have another function other than presenting artifacts to visitors?

The *Play the Past* blog features games with museums in them, but museum presence in the gaming world past and present remains relatively small.[1] In *Uncharted 2* and *3* and *The Last of Us* (all from Naughty Dog), museums act as spaces to further each game's narrative. The museum in *Bioshock 2* is used as a political device to indoctrinate young visitors into believing the Utopian ideals of their city, Rapture. The museum in *Wildstar* provides game lore along with a sense of civic pride tied to a player's faction.

Museums in other games fit neatly into one or more categories of setting, politics, lore:[2]

Lands of Lore: Guardians of Destiny
Gabriel Knight 2 and *3*
Call of Cthulhu: Shadow of the Comet (with its Lovecraft Museum)
Ultima games (including *VII*)
The Dagger of Amon Ra
Blood 2
Still Life
Fallout 3
Runaway
Ghostbusters: The Video Game
Ghostbusters 2
Batman: Arkham City
Planescape: Torment
Shivers
Turok 3
Vampire The Masquerade: Bloodlines
Parasite Eve
Sly Cooper
Sly 2
The Messenger (aka *Louvre: The Final Curse*)
Ripley's Believe It or Not!
The Riddle of Master Lu
Secret Files: Tunguska
MediEvil 2
Re-Volt
Wario Land: Shake It!
The Simpson's: Bart vs. The Space Mutants
John Saul's Blackstone Chronicles: An Adventure in Terror
Chex Quest 2
Tomb Raider: The Angel of Darkness
The DaVinci Code
Mystery at the Museums

There are two museums in the unmodded, vanilla version of *Elder Scrolls V: Skyrim.* The first is the Dwemer Museum, located in Understone Keep in Markarth. In the game's lore, the Dwemer are an extinct (vanished) race of dwarves adept at mechanical devices and engineering. The museum is owned and managed by an NPC named Calcelmo who is a scholar and archaeologist specializing in Dwemer history, collecting artifacts for the museum from Dwemer ruins and from his excavation at Nchouand-Zel. Museum guards are present. Admission is free.

The museum's collections that are on display are largely under glass on tables spread throughout the vaulted underground chambers, showcasing rare and interesting Dwemer artifacts as well as a display of kitchenware (bowls, cups, cooking pots, utensils). This is in keeping with real-world archaeological museum displays that feature not only the "shinies" but also examples of artifacts used in everyday life. As a departure from other games, though, players are able to pick the locks of the display cases to either level up their lockpicking skill or to steal the museum objects to either use or sell, leaving the player with an ethical choice.

In the vastness of Skyrim, there is only one other museum, a small collection in the hamlet of Dawnstar. The quest "Visit the Museum at

Dawnstar" leads the player to a thatched, lakeside house. The curator, Silus Vesuius, is still assembling items for the museum's permanent collection and gives the player a quest to find pieces of Mehrune's Razor, a Daedric (dark elf) artifact of great historical importance. The museum, which is also Vesuius's house, contains several locked display cases containing artifacts of the Daedric cult, the Mythic Dawn. There is a complete set of Mythic Dawn clothing, a scabbard, books, and a manuscript leaf. As the player approaches each case, the curator narrates a history of what the case contains. Following the conclusion of the tour, the player can opt to kill (or incapacitate) the curator in order to access the artifacts via lockpicking.

If the player decides to undertake the "Pieces of the Past" quest, three pieces of the dagger must be located and either looted or purchased at various locations within the game, prompting further ethical questions about the nature of museum acquisition, in this case via money or bloodshed. It is not a far cry from some real-world private collectors, or from nineteenth-century private museums where the public was admitted for a fee to view artifacts collected by a wealthy patron.

The most recent addition to the series (although published by Zenimax instead of Bethesda) is *Elder Scrolls Online.* The open world is huge, requiring months to explore in real-time, yet it only has a single museum: the House of Orsimer Glories, which is in Wrothgar. This museum is run by the NPC curator Umutha and specializes in Orcish history. While she does not collect relics herself for display, she does ask adventurers to help her find more to fill the cases. This common quest type is not unique to this edition of the game but follows the tradition set at least fifteen years earlier in prior volumes.

The Museum in Godsreach (*Tribunal*) finds the player asked by the curator to find artifacts that she will buy to fill her empty display cases. The Museum of Oddities (*Shivering Isles*) also features a curator in need of artifacts ("oddities"), and the player must quest for twelve of them, including a "Soul Tomato," a "Ring of Disrobing," and a pelvis. The function of museums in the *Elder Scrolls* universe is to collect and to display while also serving as a source of increasing player experience and possibly wealth.

In considering video game museums in both the real and virtual worlds, there is one element that is relatively new: in-game or online museums of artifacts, relics, collectibles, and other items found by players. With games such as *Destiny* creating procedurally generated armor and weapons, players are asking for repositories for this data, managed by the game publishers, perhaps for online, in-game view. Such museums would also include items pertaining to the lore of the game side

by side with newly discovered artifacts. With games now culturally ubiquitous in the real world, and with millions of players spending millions of hours in-game each year, it stands to reason that these requests for transposing cultural institutions from real to virtual spaces is a logical next step. Some people go to the Metropolitan Museum of Art to spend hours ogling the collection of arms and armor. An in-game equivalent exists for players of *World of Warcraft* in the hyper-detailed Armory, a robust database of items that can be referenced at any time.[3] While not quite a museum for the casual visitor, it does utilize similar kinds of data used by most museums behind the scenes to catalogue and maintain information about the collection, which is arguably more important to the serious player than traditional displays and didactic signage. Players of the *BioShock* franchise were rewarded in the *Ultimate Rapture Edition* by a special level containing the "Museum of Orphaned Concepts," which contained the concept art and abandoned ideas for the first two games in the series. Fans of the games could now spend time learning more about the backstory of Rapture while at the same time learning about game creation and narrative. In *BioShock Infinite,* the Columbia Archaeological Society museum contains concept art that can be viewed after players complete various "Blue Ribbon Challenges." The *Ratchet & Clank* games featured similar content in their "Insomniac Museum," a secret space that only opened at a certain place during a certain hour.

This leads one into a possible paradox where players can research in-game artifacts prior to actually discovering them—in *Destiny,* players need to take their artifacts to the archaeologist for identification (similar to *Diablo* players asking the NPC Deckard Cain to identify magic items). However, one can go to any number of community forums or game websites to learn about these items, determine what the best ones are, and obtain their locations (either fixed, or as random drops). It is a kind of meta-archaeology, reading the context before finding the item. At the same time, it is not so different than an archaeologist looking at past evidence and findspots, using that data to determine where to look next.

With video game museums, we have virtual spaces for recording virtual objects with real context and real data, and real spaces for the same.

Virtual Artifacts and Their Real-World Manifestation

We are all heretics, at least those of us who play video games. We seek to communicate with that which we cannot see, but to do so we have to

interact with objects. When that communion concludes, players take it on faith that the invisible remains accessible, and event present.

Video games embody a paradox that stems from centuries of creating things to give people access to the unknown or the unknowable. Victor Buchli, in the preface of his book *An Archaeology of the Immaterial,* states that "the production of the immaterial has been and always will be an important operation in human social life. To intervene materially, to reject the materiality of the world, is at the heart of the productive paradox of the immaterial" (Buchli 2016: vii). Raiford Guins seconds this, noting that "video games are object-information composite by design . . . they are already objects of and for information" (Guins 2014: 47). The physical device contains the ephemeral data.

As described in chapter 1, a video game is a complex site-artifact, created through an interdisciplinary mix of creativity, coding, and manufacturing, all within a sociopolitical context of when and where the game was made, and still even beholden, as Guins relates, to government standards for electronic devices and patent functionality (and non-functionality) (Guins 2014: 7–8). The thing though—the game-as-artifact—continues the physical/metaphysical paradox when one thinks of the vessel and what it contains. With video games, as Buchli describes, the physical container is actually the more fragile and fugitive of the two components, with the underlying code able to outlive its vessel (Buchli 2016: x). The code is kept somewhere else, in other physical copies, as well as on backups, servers, and master disks, practically immortal (when care is given to its preservation). Games are ideas that require physical media in order to reach their intended audiences. Even if a disk is defective, there is always another way to communicate the idea of the game to the player.

So what does this mean for gameplay? Someone writes code that becomes a game. That code lives on media somewhere: a cartridge, a smartphone, a server. The code waits to be activated by the player who then works within the rules established by that code in order to play the game. Upon completion of play, the player disengages with the code wherever it lives, unseen, by removing contact with the hardware used to play it. The code remains, waiting to be accessed again, or not. Code is amoral. It exists until it does not, and it does not care if it is accessed zero, one, or one million times. The code itself is immaterial, albeit manipulated by its maker for the player to interact with, but on another plane, that of gameplay. Playing the game, the player is conscious of one world while unconscious of the world above it. It is another dimension. Glitches in the game give fleeting, frustrating access into that other plane, although the interpretation of why a glitch

happened remains beyond most understanding. We see the fallibility of the maker but not the exact reason for that mistake.

Buchli continues with the paradox: "An . . . aspect of the immaterial's paradoxicality is its profound visuality. This paradox is more an 'artefact' of our received visualist sensorium which requires the decorporealization of sight for its efficacy" (Buchli 2016: 19). In other words, with video games, seeing is believing. We hold a world on a disk. We place the disk in the drive/slot. The world is either created or accessed, or it is created upon being accessed. This leads us to consider how the world is created in the first place, and I do not think it matters if the game is static (e.g., *Donkey Kong*), or procedural (e.g., *No Man's Sky*). Is the world waiting for us like some amusement park at dawn, or is it created for us on the fly, the code generating the world as fast as we can explore it? And when we are done exploring it, does it reset to a zero-state, or does it continue to exist with or without us? As players, are we creating the artifacts of the world just by interacting with the environment, working within the rules of algorithms to create it? Are we then in turn makers and producers of what we see, the code itself lying dormant until played with?

It is video games as embodiments of the Heisenberg Principal. And not only that, but when we start to pay attention to how and where and when and why things are created based on our observations, we might begin to recognize patterns, and when we recognize patterns, we can begin to create our own rules to quantify them, and when we begin to combine those rules of creation, we approach a Grand Unified Theory (GUT) of a particular game, which operates on its own set of rules separate from other games, which have their own GUTs. In effect, each game is its own universe with its own physics governed by rules that can be clean or messy, strict or arbitrary, really reflecting the state of the maker responsible for the code itself.

William Sims Bainbridge in his ethnography of *World of Warcraft* observed that the boundary between the real and game world is porous, and it is difficult to cleanly separate the two. Play takes place in its own environment (Bainbridge 2010: 222). The crossover from the real to the virtual, however, continues to be pursued by game developers who wish to inject realism into their games. This is perhaps best illustrated in war games that are either set in a particular place and time or attempt to mirror current weapons, armor, and vehicles. After filming *Saving Private Ryan*, director Steven Spielberg wanted to see a war game that was as accurate as possible with locations, history, and weapons, marking the first case of this kind of realism in video games (Stanton 2015: 154–55). This has been taken to the extreme in the *Call*

of Duty series, where the makes and manufactures of guns are licensed by Infinity Ward/Activision for use in the game. Players could conceivably go out into the real world to buy the weapon they favored when playing the game (Stanton 2015: 354). It is only a matter of time before the line between material and immaterial is blurred with the active use of 3D printing (Buchli 2016: 144–60). Players will be able to print the creatures and/or items they find or, conversely, 3D scan something to import directly into the game (as has already been done in virtual worlds such as *Second Life* with the import of buildings created in *Unity, Maya,* or similar.

The code, however, is the supreme artifact, which can itself be broken down further into its grammar, syntax, and orthography. Think of code as you would an ancient (or modern) clay pot. The pot is an artifact, a thing. But the pot might be glazed. The clay of the pot can be examined; we can learn about its crystals and structure. That data in turn can inform where the clay was sourced, and we can deduce who might have sourced it, where it went for production, and ultimately where it went for use. The pot can be interacted with and can serve multiple functions desired by the user. The pot was not spontaneously generated. It was designed and then made, in most cases by an unseen hand. So it is with video games, made by people most of us will never see, comprised of syntax and grammar most of us will never understand or even notice, creating something we can manipulate to get at the sweetness of fantasy, or a world not of this one but of one or more imaginations.[4] The game has become a metaphysical artifact/object occupying two states at once, a thing in the real world and a visual space in another.

So what happens when we reach Iconoclasm in video games? In certain interpretations of Christianity and Islam, the faithful must eschew the material in order to approach the divine. How will we as players interact with these immaterial worlds post-media, post-hardware? What then becomes the archaeological artifact of the game, and how will that be defined when the artifact cannot be counted or weighed, when we shift between worlds without console, controller, keyboard, or mouse? How do we conduct an archaeological investigation of a thing we cannot touch?

Experimental Archaeology

Experimental archaeology focuses on testing hypotheses of how things might have been done in the past: everything from construction to

transport and more, attempting to recreate methods using materials as suggested by primary sources and the archaeological record. Famous examples of experimental archaeology include Thor Heyerdahl's *Kon-Tiki* voyage to demonstrate trans-Pacific trade[5] and Janet Stephens's work in recreating ancient Roman hairstyles on living models.[6]

Reconstructions of ancient sites can serve as a kind of experimental archaeology within games such as those in the *Assassin's Creed* series. The natural world (and its data) translates into the virtual by way of engines such as *Unity* and *Maya,* as well as in sandbox software such as *Minecraft.*

Within the framework of archaeogaming, experimental archaeology works backward as well, beginning with the game. Take food for example, mainly because it is arguably the most accessible way for someone to try to recreate something from a game in the real world. Rosanna Pansino's YouTube channel, "Nerdy Nummies," with nearly seven million subscribers, includes video game–themed sweets (e.g., *Warcraft* Cookies and *Undertale* Spider Donuts),[7] but nothing that attempts to recreate or interpret actual recipes from games that include a cooking skill. While there are few YouTube channels dedicated to video game cookery (and none approaching Pansino's popularity), there are some websites that include sections on recreating the food featured in games. *The Geeky Chef* currently features seventeen game-recreations, including Seheron fish sandwich (*Dragon Age: Inquisition*), Yeto's superb pumpkin and goat cheese soup (*The Legend of Zelda: Twilight Princess*), sweetroll (*Skyrim*), and other favorites.[8] The recipes are posted online, and the community troubleshoots them to come as close as possible to the perception of the virtual food. Other sites such as Eat Game Live,[9] Eat a Byte,[10] and Gourmet Gaming[11] also regularly publish food-from-the-game recipes, which include narratives of what inspired the recipe, selection of ingredients, and the outcomes, some good, some not. For *Final Fantasy XV,* its development team actually camped and cooked in order to get the in-game recipes correct (and believable).[12]

The experimental archaeology within the context of food recipes tests the possibility of a virtual world recipe actually working in the real one. The amounts and names of ingredients can be inexact within a game, much like reading real-world recipes from history, making best guesses, and then revising to try again.[13] For example, a fifteenth-century onion tart recipe from Italy states to boil onions and scallions, mash them, then beat with lard, eggs, cheese, and saffron, and "make the tart."[14]

The trick, in games just as in interpreting old recipes, is in measuring the ingredients. In games that have a cooking component, all rely on

finding a cooking pot, fire, or hearth, and also wild (or purchased) ingredients, but not measures. For example, in *Skyrim,* players can make apple cabbage stew with a salt pile, a red apple, and cabbage. In *World of Warcraft,* players can make a "tasty cupcake" with two units of simple flour and a Northern egg. Players depend on recipes either found or bought that can be learned when a player gets to an appropriate level. But for the experimental chef in a real-world kitchen, mixing flour and an egg and then baking over a fire will yield something less-than-tasty.

Lore and Lore Communities

One of the elements of any culture is that its people maintain a shared narrative, a shared history. Combine culture with a constructed environment and you have the makings of a civilization. Many games contain ready-made lore, a historic and often racial narrative of the cultures (playable and not) created by the developers from scratch or inherited from earlier media (books, films, etc.), with the game tying into that history, sometimes becoming "canon." Even in historical games such as *Battlefield 1942,* players use lore from World War II to inform their own historical reenactments within the game (Chapman 2016: 211). Lore does not confine itself to fantasy.

As with other aspects of video games, particularly with MMOs, we not only experience lore through art, architecture, books, and even artifacts that are all provided in-game, we also inherit (or become part of) the lore created by the in-game player community. For example, one particular five-person instance group in *World of Warcraft* filmed their elaborate preparations only to be completely annihilated (wiped) by the enemies (mobs) within the instance (dungeon) after the headstrong lone wolf, "Leeroy Jenkins," rushed in before the party was fully prepared. That single act of bravado became an instant classic, not tied to any race or class within the game but as part of the lore of the game itself.[15]

Lore is a game's own mythology, stuffed with gods, monsters, and heroes, both supernatural and human, passed down through generations of players either by other players or by the words crafted by the developers themselves. Consider Greek mythology, its lore recorded and distributed in part by Hesiod in *Theogony.* These initial communications are not unlike Blizzard Entertainment's foray into the first *Warcraft* games and related books, which created a story-empire that ultimately resulted not only in the most popular MMO ever played but also in a Hollywood blockbuster film, *Warcraft,* based on the game lore of the ancient conflict between orcs and humans.

Lore inevitably begets lore communities comprised of players with a serious academic interest in the minutiae of all of the elements of these parent tales to the point of excessiveness. This is no difference between the arguments of those deeply invested in canon lore and its representation and deviations in a game, and those dealing with the academic details of archaeological desiderata of pottery chronology. The same scholarship, attention to detail, and passions exist.

Sometimes the archeological record produces evidence to overturn previous theories, creating a new narrative. The burden of proof falls to the discovering archaeologists, which is then vetted (or refuted) by the community through research and dialogue. A notable recent example features the resting place of King Richard III, whose burial place at Greyfriars Friary in Leicester was lost to time after its sixteenth-century demolition. In 2012 archaeologists from the University of Leicester began their excavation in a public parking lot. A skeleton of a man in his thirties with a curved spine and head injury from a bladed weapon seemed to point to the identification of the remains as belonging to King Richard III. DNA and radiocarbon testing followed, as did an osteological analysis of the bones, which ultimately concluded in the positive identification of the remains. The body, its disposition and injuries, confirmed the lore surrounding the king's death and burial, and the tests satisfied scientists and the public. The body was reinterred in 2015, a royal burial.

With game lore communities, sometimes new lore introduced as canon (or into the game whether or not it is canon) causes as much debate (or more) as that seen in professional archaeological circles. When Blizzard announced that it was releasing its *Mists of Pandaria* patch for *WoW,* the lore community reeled. Blizzard introduced a panda NPC as part of an April Fool's joke in 2002. *Warcraft* had no race of panda-inspired humanoids. Ten years later, Blizzard introduced a playable region filled with pandas, their art, architecture, and philosophy inspired by ancient China. It was as if Blizzard created new lore out of thin air, something that is within a developer's power, but at the same time shocked the students of the lore of Azeroth. Culture doesn't spring fully formed from the earth, absent one day and then fully present the next. But it can (and does) in video games, especially when the developer needs to create new content to keep the game interesting/relevant, and to cater to emerging markets. Chinese players of *WoW* number in the millions, so perhaps it made sense to Blizzard to create Chinese-themed lore to cater to this massive group of players. Blizzard created *WoW,* after all, to make money. Tara Copplestone recognizes this cynical fact: "The epistemological assumptions of videogame developers can and

do—whether knowingly or not—play a significant role in how history or cultural-heritage is produced in the games that they craft through code, art, sound and narrative" (Copplestone 2016: 6).

With games, developers have full control over what appears in the game-space (and what doesn't). Sometimes, as in the above case with Blizzard, the decision to proceed with game-defying lore is made unilaterally. In other cases, as with Bethesda and their wildly popular *Elder Scrolls* series, the lore community is consulted. As games within this series were developed, the lore communities online were asked to help with continuity between titles so that the games all tied in to the shared lore of Tamriel. The stories and cycles approach a depth and sophistication rivaling any real-world saga, making the gameplay inseparable from the story that crafted this environment.

With both lore community examples above, one sees how they reflect the actual, real-world practice of mythmaking. On the one hand, one receives canon lore directly from the primary texts created by the developer. On the other hand, a community of people continue to spread the myths while adding to them or modifying them. Myth, derived from canon, changes with time and voices, recalling the original while adding to it like so many layers of sediment. We have an archaeology of storytelling.

These stories can inform the production of artifacts and monuments in both the real and virtual worlds. One can build a plain structure, or one can infuse that structure with meaning by including iconography derived from myth. Adding that imagery creates clues to the archaeologist about the structure's function, although the archaeologist must take care to note if these symbols and references are added as easy, ready-made tropes or if they are indeed imbued with deeper meaning and intended purpose. The lore community can spot fraud easily and can be vocal with the developer about deviations from the story and from the use of iconography in nontraditional ways either by design or accident.

Keith Stuart, a writer for Eurogamer.net, wrote about the problem with video game lore:[16] developers equate volume with depth. They also equate obfuscation with depth. To many developers, their games merit and promote byzantine backstory and hundreds or thousands of pages of faux history to justify why the games and game-worlds are what they are. He argues, though, that most lore does not serve gameplay and provides little benefit to players. Adding some lore and some backstory can work to imbue a bit of mystery, and including some occasional cues can create ambience. For some players, though, the lore is crucial to the game. One can enjoy the *Star Wars* universe as a player,

but knowing that depth of detail and depth of overarching narrative adds meaning and can also carry emotional resonance, especially when playing an MMO such as *Star Wars: The Old Republic.* The lore of *Star Wars* (films, books, games) approaches the sacred. That attitude is present in other series as well. For example lore complaints about *Fallout 4* run rampant in online forums,[17] citing discrepancies with everything from base in-world currency to the intelligence of mutants to the fate of the Institute. For games such as those in the *Fallout* series, the lore is not just the developer-created backstory of how the world came to be. The lore is created in the first game, which becomes canon. The rules set up in the first game must carry through to future games in the series, and those games must not deviate from those rules unless there is a very good reason as explained in later titles. Complexity shows up again when considering game lore. With complexity, a base set of rules can be used to generate future rules and scenarios that create more information about a world without violating the initial rules of creation. Disregarding those rules is considered to be bad form (and even laziness) on the part of the game studio.

Lore-transition (or disregard for lore) can come when a game franchise is handed off to another publisher. For example, Bethesda Softworks handed of the wildly popular *Elder Scrolls* series to Zenimax Online for *Elder Scrolls Online.* The hardcore community of players was greatly concerned about how the lore would be handled in this change of studios.[18] Zenimax attempted to sidestep the lore issues by setting the world of *ESO* over one thousand years in the past, before the world of the first *Elder Scrolls* title, *Arena* (2004). That setting does avoid many continuity issues, but it cannot get around introducing others. Because the world of Tamriel is so old and is so tied to its own traditions and contains literal libraries of lorebooks for players to consume, any new, core elements to that world must jibe with what has come before. The example taken from the link above in note 18 is that of the "anchors," evil sites that tie Tamriel to the demon-haunted world of Oblivion. In all of the books of Tamriel lore, in all of the antiquity-theme quests, and in all of the dialogues with antiquarian NPCs, these anchors (which are gigantic and which leave a massive footprint on the land even after destruction) are absent from the literature and from the Tamriel that appears in the five earlier games. It is as if the Singularity happened, and two different Tamriels collided. Retrofitting lore failed, at least in this instance.

Compare game lore to real-world lore in the form of Classical mythology. Myths and origin stories have always enjoyed flexibility, with

geographic variations serving as canon in their parent regions while being acknowledged as myths evolved. Perhaps one of the greatest differences between the lore of the real and of the virtual is that in the real world, lore is expected to grow and change; we cannot define for absolute certainty the first time a story was told, and we rely on secondary sources that can and do conflict with one another. In the case of video game lore, players can point to the first appearance of something and can readily follow the thread forward in time, pointing out when a game franchise breaks with tradition.

In Greek mythology, we get most of our origin stories from Hesiod's *Theogony*. Later authors spin their own interpretations of myth. For example, in Zeus's origin story, Callimachus writes two versions, one having Zeus raised on honey on Crete by nymphs, while another story says that Zeus spent his infancy in a cradle suspended in the air. Athenaeus, however, writes that as a baby Zeus was sustained by doves and an eagle that fed him nectar and ambrosia. Antoninus Liberalis writes another account, where Zeus comes of age in a cave of bees along with three friends. In *Theogony*, Zeus is the child of Kronos and Rhea, but his upbringing is not mentioned. All of these stories contribute to the overall lore surrounding the king of the Greek gods, but none are as specific or verifiable as any lore from a video game. With games, there is an Ur-moment, unless the developer has decided to deliberately shroud parts of a game's history/mythology.

What then is the role of the archaeogamer when studying lore? One can certainly compare and contrast the lore shared between titles within a series. One can study the player community reactions (both positive and negative) to in-game lore. Perhaps the most interesting element on the horizon of lore-heavy games is lore that is procedurally generated. Can code create culture, or at least a backstory of culture, through art, monuments, and language, and what will that culture look like? Will different players see different cultures created within the same game, and how is complexity involved in the process? Procedural lore will mix the lore of the real and virtual worlds, following the rules of both, where players can discover the origins of something, which can then be open to interpretation based on variations across all players and their copies of the games. We see player agency and a randomness of creation in games by Sid Meier (the *Civilization* series), but there is no real underlying story as to the "why" of the buildings. Allowing the game to create its own culture to be explored by players after its creation would seem to be the next—and certainly most vital—stage of video game archaeology. This is what we have been training for.