

Ludic Spolia in Sid Meier's Civilization: Beyond Earth

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Abstract

The use and repurposing of ludic spolia from Sid Meier's Civilization V within Sid Meier's Civilization: Beyond Earth conforms to the same patterns as architectural spolia: ludic spolia is both practical and symbolic, both about coopting the power of the past and about charting a new future. This process is visible throughout Beyond Earth—from small, seeming irrelevant spoliations of Civilization V, to much broader, systematic changes. Specifically, this essay focuses on the shift from Barbarians to Aliens, the adaptation of the Technology Web instead of the Technology Tree, and the implications of early development of Affinities in Beyond Earth as opposed to late adoption of Ideologies within Civilization V. While all three could be understood as simple changes to the basic Civilization formula, Beyond Earth's use of spolia creates enough dissonance between itself and past Civilization games that it creates space for the player to question the underlying assumptions of the franchise itself. Instead of merely coopting Civilization V, Beyond Earth challenges it.

Introduction

The turn-based strategy videogame series *Civilization* has been wildly popular since its first iteration, *Sid Meier's Civilization*, was released in 1991.¹ The franchise's most recent canonical installment, *Sid Meier's Civilization V* (released in 2010 with the expansion packs *Gods & Kings* and *Brave New World* available in 2012 and 2013, respectively), continued the long tradition of *Civilization*.² Late in 2014, *Sid Meier's Civilization: Beyond Earth* launched, and its expansion pack, *Rising Tide*, premiered almost a year later. The deep similarities between *Civilization V* and *Beyond Earth* (both developed by Firaxis Games) were immediately apparent to anyone who had played both games (Campbell, 2014; Peckham, 2014; Barnes, 2014).³ PC Gamer reviewer Russ Pitts (2014) summed up the problems and

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advantages of this closeness thusly:

Beyond Earth, while bearing many attributes of a brand new game, is based in *Civilization V*'s engine and mechanics. It is in many ways exactly the same game as *Civ 5*, just spacier. Is that a problem? That depends on how much you like *Civ 5*, and how willing you are to take the ride and give *Beyond Earth*'s new space look a shot.

Pitts' review echos what many others said at the time—*Beyond Earth* is not really a distinct, discrete, stand-alone game that can be understood and evaluated outside of its relationship to *Civilization V*. In fact, *Beyond Earth* borrows so much of its infrastructure from *Civilization V* that this paper will argue that the terms inheritor, sequel, and spiritual successor hardly explain the causal and physical nature of the relationship between the two games. Instead, the relationship between *Beyond Earth*'s and *Civilization V* is much closer to the art historical term *spoliation*. Spoliation describes the state's and individuals' reuse and adaptation of preexisting elements (columns, decorative sculptures, etc.) in the construction of new buildings (Kinney, 1997). Conquering emperors were quick to confiscate and reinstall older monuments, while scavenging builders often seized elements from dilapidated, older buildings to adorn their new creations (Alchermes, 1994).

In the context of games, the spoliated elements may be gaming engines, graphics—even the mechanics and rules of an early game that are integrated into a new game. While *Beyond Earth* did not garner the critical acclaim Firaxis had hoped, (Rob Zacny (2016) memorably called it “the 4x equivalent of a shrug”), it is a useful case study as part of a larger discussion about reuse in games. As an analytic tool, spolia allows for a more considered analysis of how powerful gaming companies (such as BioWare, Epic Games, Activision, etc.) re-deploy gaming mechanics, digital assets, and even engines in the interest in keeping costs low and maintaining a link to the past. This reuse has two important ramifications. First, at the micro level, by spoliating a particular game or franchise a developer can consolidate and reinforce the importance of those franchises (hence we get a million Call of Duties and Civilizations, perhaps at the expense of other stories and gameplay mechanics). Secondly, at a macro level, such reuse by repetition insinuates that former games types and their gaming conventions are important, and alludes to the necessity of their forms. Thus, by creating a long line of first-person shooters, companies can give the suggestion that games *ought* to contain violence.

In order to prove that spolia is a useful analytic tool for videogames, this paper will first look at questions of appropriation within game studies, positing the need for spolia as a conceptual lens. From there, it considers the key discussions surrounding the practical and symbolic uses of spolia, as well as the practice of spoliation to rely on the past while simultaneously critiquing it. Finally, by means of example, it presents an object-oriented investigation into the spolia that formed *Sid Meier's Civilization: Beyond Earth*. In key areas (the treatment and actions of indigenous inhabitants, technology paths, the ideological timelines of the player's civilizations, and how it paints space as hostile to human life) *Beyond Earth* spoliated *Civilization V* again and again. This paper concludes by proving

that although spoliated elements from *Civilization V* enhance *Beyond Earth's* connection to the *Civilization* franchise, they also open up room for an extended critique of the larger *Civilization* project. Spolia's fugitive nature, slippery and hard to simply deploy, can cause the player to doubt many of the assumptions build into the bedrock of the original game.

Appropriations, Artistic Interventions and . . . Spolia?

In our postindustrial, postproduction culture, copying and appropriation are commonplace in artistic practice. Nicolas Bourriaud (2002) argues that the explosion of globalism along with the World Wide Web have encouraged artists to remix already existing signs and signifiers. One need only list a few of the most famous artists of the 20th and 21st centuries (Marcel Duchamp, Pablo Picasso, Sherrie Levine, Richard Prince, among many others) to see the influence of appropriation in art. In the gaming sphere, academics like Mary Flanagan (2009) and Steve Gibson (2012) show the many ways artists, game designers, and players inhabit and subvert widely accessible and marketed games, as well as how they create new games that critique the popular games' central conceits through appropriation.

Like so many artists, appropriation can become a way to rebel against artistic and cultural norms. When Sherrie Levine rephotographs Edward Weston and other great modernist photographers' photographs, the displacement and recontextualization of their images makes us question their artistic authority and their male gaze (Solomon-Godeau, 2003). Gaming has many similar problems. Mary Flanagan (2009) points towards the deep inequities in the commercial gaming landscape. Notably, she cites industry surveys that reveal that very few women or people of color are involved in the design of popular, highly funded games. As a remedy for this problem, independent games, artist games, and activist games may provide a counterbalance (Anthropy, 2012). Through appropriation and remix, many of these activist games play off of and subvert contemporary gaming culture – they highlight the violence of so many of our games, their sexist tendencies, as well their racial prejudices.

While Flanagan (2009) acknowledges the power the designer can have to redefine what games are, the most radical part of her argument rests on the identification and enumeration of the ways players themselves can and do subvert popular, high budget games; she names this process unplaying. While all players necessarily interact with the implicit and explicit assumptions of the game designers via interaction with the rules of the game (Bogost, 2007), some players do engage in the subversive approach of "unplaying." *The Sims*, argues Flanagan (2009), has some of "the most powerful alternative play strategies available to computer games" (p. 59). In particular there are the many ways that players themselves fight back against the ingrained ideological messages implicit in a game like *the Sims* (such as the importance of a Western style of gendered domesticity, suburbia and home-ownership, as well as the importance of self-actualization and wish-fulfillment). Players unplay *The Sims* by superimposing incongruous images into banal interiors, creating elaborate ways to torture and kill their Sims (as opposed to nurturing them), and interacting with a larger fanbase to create new narratives. Artistic projects like Robin Burkinshaw's (2009) "Alice and Kev: The

story of being homeless in *The Sims 3*” which intentionally work against the rules of *The Sims*, have the ability to powerfully critique the assumptions built into these games.

This subversive use of industrially produced goods recalls the spirit of the 20th century Dada movement. The Dadaist ready-made ethos often engaged with industrially produced objects to elevate the mundane and critique the strict division between art and the everyday (Rosenthal, 2004). Gibson (2012) shows how artists often borrow and replace elements of games in order to critique the original:

Feng Mengbo’s *Q4U* also establishes some conventions for game art and has some implications for our discussion of Dadaist game art: it shamelessly uses a commercial game engine (*Quake III*) as a source for the mod; it creates an identifiably absurd scenario by populating the game with clones of the artist’s comparatively ‘everyman’ avatar in place of the menacing originals; and it evokes a contradictory sense of both amusement and self-criticism when playing the game.

It thus seems that there are several types of interactions possible for individuals:

1. Players who play the game as directed. These players almost certainly feel, even if they do not articulate, the ideological assumptions built into the game (Bogost, 2007).
2. Players who unplay the game, whether intentionally to subvert it, or because they see the game as a safe space for experimentation (Flanagan, 2009).
3. Player/Artists who create mods or use existing characters and tropes to challenge the status quo of contemporary, large-scale game production and its deeply entrenched assumptions.

What seems to be missing from this picture is the way that large-scale game developers themselves engage in appropriation and reuse of their own materials. The intensity of our interest in individual artists and players is understandable for a discipline that is still seeking wide-spread acceptance and working to establish a recognized canon of artistic genius (Coberly, 2016). Our historical preoccupation with the individual and the heroic stories we perpetuate around genius is still at the heart of discussions of appropriation. When Sherrie Levin re-photographs Edward Weston’s iconic images, she pits her genius against his; her appropriation of his work solidifies her place in the canon of art history. In the same way, we constantly seize upon individuals who disrupt corporate narratives of games (Clark, 2012).

The reuse and appropriation enacted by large-scale developers would initially seem to be at odds with the player’s often critical stance, as outlined above. Indeed, when we turn to look at companies’ use of appropriation, iteration, and reuse, it might seem as though the requisite criticality is missing. In 2010, a group of researchers concluded that there are four primary ways digital game companies tend to engage in copying and reuse: 1) many

games are linked to theatrical movie releases; 2) companies like to create sequels with better engines and graphics (which are often within the same genre as the first game, and often include the same characters); 3) companies will re-edit existing games (again, often updating the graphics and strengthening the game's core scenarios); 4) companies will release the same games on many different platforms, and such a move calls for more versatile coding practices (Neto, Fernandes, Werner, & de Souza, 2010). This is unsurprising for anyone who has even had a passing interaction with pop culture. The remake, the sequel, the satirical send-up, and the comeback abound. Many of the highest grossing films and games of the past few years have been sequels in a series of sequels (Star Wars, Fast and Furious, Harry Potter, Grand Theft Auto, Modern Warfare, etc.). Such iterations, while they do rely on ready-mades and appropriation, lack the criticality often exhibited by artists and game makers who rely on appropriation. What is clear from the four categories outlined by Neto, Fernandes, Werner, and de Souza (2010) is that while the reasons motivating a company's reuse are most likely pragmatic in nature, the commercial success of such ventures relies on their audience's connection to past creations, whether they be other games or forms of media. It may be financially practical to create popular games through reuse, but companies cannot forget their consumers. The new versions must also provide something unique or, at the very least, something *more* or extended in order to convince people to actually purchase them.

Given this milieu of appropriation, iteration, and reuse, spolia becomes a useful critical tool because of its long-standing history associated with political power. Unlike the player- and game maker/artist-focused arguments from Bogost, Flanagan, and Gibson, the discussions around spolia are much more about how political power protects and extends itself into the past and future. Perhaps the most appealing reason for researchers to consider spolia is its inherently ambivalent nature. As we will see below in the case of *Beyond Earth* and *Civilization V*, the use of spolia from *Civilization V* combined with the changes implemented to make *Beyond Earth* feel like a new game both strengthens the *Civilization* brand, while *simultaneously* creating space for the player to question the traditional *Civilization* formula. Unlike individual artists and gamemakers who actively seek to disrupt authority and hegemony, developers (with a vested interest in their franchisees' brands) tend to be less radical. As the following discussion of spolia will make clear, the use of spolia creates space for this questioning, whether or not the developers desired such criticality. Through reuse can be profitable, it may ultimately weaken the authority of the whole franchise.

Spolia

Etymologically, from the Latin, spolia are the direct *spoils* (armor, weaponry, etc.) taken from an enemy in battle (Greenhalgh, 2011). When Renaissance artists such as Raphael discuss spolia, however, they are talking about the columns, supports, and decorations that Medieval builders pilfered from ancient buildings in order to make their own (Kinny, 1997). Raphael was distressed about the state of the spoliated classic Roman architecture, and begged Pope Leo the 10th to stop the practice (Raphael, 1519/2006). All throughout the Medieval period, the Forum, the Colosseum, and various other pagan temples were mined for their treasures

in order to build up other parts of Christian Rome. Well-known examples of spoliation are the bas-reliefs taken from Roman monuments (including Trajan's Forum) to decorate Constantine's Triumphal Arch and the many different types of columns taken from churches and temples around Rome to create the first St. Peter's Basilica (Krautheimer, 1967). Spolia can be either decorative or structural, so long as they originated from some other pre-existing structure.

Spolia (the noun) and spoliation (the verb) have typically been reserved for architectural practices, but I argue that these terms can shed light on digital practices. In the most general sense, spoliation is the act of taking elements from one piece of architecture for use in a different piece of architecture. I argue that such a discussion makes clear that digital practices of reuse are not aberrant, but in fact have historical precedent. This paper sees ludic spolia (understood as the spoliation of rules, mechanics, and even physical code and digital assets) as a recognizable phenomenon that is precipitated by the same concerns that drove (and continue to drive) physical spoliation.

The act of spoliation uses the past to create a base (physically) and a lineage (ideologically) for a wholly different future. In describing Emperor Constantine's use of spolia in his triumphal arch and later Imperial visual program, Jas Elsner (2000) argues, "[a]ll this *spolia* represents an urge to turn to the material culture of the past in order to bolster the present. The distinction and authority of a new dynasty and a new capital were underwritten by an intense visual programme appealing to and rooted in the past" (p. 155). Through their connection to the past, spolia are both physical and ideological. That they are what they were before and what they are now, contributes to what Dale Kinney (2001) has called their "fundamental ambiguity [. . .] the simultaneous positions of understanding [spolia] in terms of their original purpose and context and in terms of the context and purpose of their reuse" (p. 145). It is this tension that drives my current project, as well as a question: is it meaningful to think of rules and game mechanics as things that can be spoliated? That is, are there instances of games where rules and mechanics are directly moved from one game to another, and what does this practice mean? Does it have a connection to these historical practices? If so, what sorts of messages do these spoliated rules and mechanics convey to players? If, like the first observers of Constantine's Triumphal Arch, we were familiar enough with the originals to recognize their parts in the new creation, what does this taking and reuse mean to us? In answering these questions, we are guided by the central ambiguity of spolia (that is, its both reverential and destructive attitude towards the past), as well as its practical and symbolic ramifications.

Clearly, there are some major differences between physical and digital acts of spoliation. Perhaps the most fundamental revolves around the fact that digital spoliation does not cause irreparable harm to the spoliated object. If you make an iteration of one digital file and save it under a new name (New File_Version 2), that act does not destroy the original document. Similarly, claiming that *Beyond Earth* contains spolia from *Civilization V*, does not mean that *Civilization V* was ruined to create *Beyond Earth*. It is entirely possible to keep playing *Civilization V* as though *Beyond Earth* never existed and, indeed, many players do so. The

destruction of the original object is a physical limitation that, happily, does not apply to code. Unlike Raphael, digital humanists do not need to worry that the growth of spoliated creations will destroy the architectures of the past. Indeed, with more and more games providing modification (Mod) packs/modules for their games, ludic spoliation remains a vital part of both professional and amateur interaction with games (Strik, 2015), continuing to multiply the number of available games.

This lack of ruination does not mean, however, that new games do not have an effect on older games. As the empty servers of *Halo 3* can attest, the release of a new version of a game that contains spolia (whether a physical copying of the game engine, visual assets, or mechanics that were new to the older game and serve to make the new game better) often means that an old game will be eclipsed in popularity by the new one.⁴ As specific user interface affordances become commonplace, newer games provide space for reflection upon the past successes and failures of the franchise. Companies hope that the new game will be able to attract fans from the previous game. Abandonment of a game by its developers and players is a type of violence, and in this way there is violence towards the original that is analogous to most conceptions of architectural spolia. Spolia is both reverent and irreverent. It relies on the past for meaning (as many of these games rely on their canon and pre-existing fans) and yet seeks to replace the past model with itself.

Acts of spoliation are performed for both practical and symbolic purposes. Practical spoliation is most often motivated by monetary concerns: it is often less expensive to reuse something that has already been built. I will show that digital spoliation is often motivated by practical considerations. Only focusing on practical spoliation, however, misses the larger symbolic context of spolia. The symbolic status of spolia is twofold and ideologically slippery. Spolia both exalts the past and proclaims the present's triumph over it; symbolic uses of spolia play into the glory and success of the past while simultaneously proclaiming a new future. By looking at the symbolic use of spolia within digital games such as *Beyond Earth*, I will show how hard it is for developers to control the messages players receive from spolia and how this, in turn, can disrupt the ideological hegemony imposed by the original game.

Practical Spoliation

Practical spoliation often happens for monetary reasons; it is generally less expensive to take elements from something that has already been built than it is to start from scratch. Michael Greenhalgh (2011) has argued for this understanding of spolia, which concentrates on simple economic and physical constraints. He argues that obtaining new building materials (particularly highly valued marble) became harder and harder in the late Middle Ages, leading builders to reuse other structures (Greenhalgh, 2011). There is a similar logic at work within the *Civilization* franchise—by using an already established model with a built-in fanbase, Firaxis can be assured of a return on their investment.

Civilization V follows a very traditional *Civilization* model: the omnipotent god-like player controls the fate of a civilization from the dawn of time until the near future. The player dictates the creation of cities and helps them build the infrastructure necessary for growth.

She must balance the good of individual cities with the needs of the empire, develop and conserve natural resources, set research and cultural agendas, all while maintaining economic and diplomatic relationships with other civilizations. *Civilization V* made several decisive design choices to separate itself from the beloved *Civilization IV*. It updated its graphics, moved to a hex grid, and prevented more than one military unit from occupying a hex at the same time. These last two changes drastically altered the way that war could be conducted. Instead of the *Civilization IV* model where dozens of units could be stacked in the same square, *Civilization V* prioritizes physical movement of units and their placement on the map. Practically, this means that siege engines must stay back from the fray to allow melee units to conquer a city. This change heightens the strategic, war-game elements of the *Civilization* franchise, and makes play much more difficult and interesting.

The move from *Civilization V* to *Beyond Earth* is a better illustration of spolia than the move from *Civilization IV* to *V*. Indeed, it is the similarity and legibility of the original object within the context of the new object that lends spolia its unique power; in this case, it is the unmistakable evidence of countless elements of *Civilization V* within *Beyond Earth* that lends *Beyond Earth* its provocative stance. There is a felt and practical difference between games that engage in the taking and repurposing act of spoliation like *Beyond Earth* and games that are sequels. Sequels often advance the timeline/chronology of a particular plot or set of characters and contain massive updates to the engine and mechanics of the game. Spoliated games, in contrast, actually mine the older game, often using the older game's engine, mechanics, and digital assets. *Civilization* is an iterative franchise, meaning that it continues to develop a central conceit (rule a important civilization from the dawn of time onwards) all while updating and changing its approach to core mechanics, visual style, and gaming engine. The long line of *Civilization* games have, at their heart, attempted to model the historical trajectory of humanity. Starting with the wandering nomads who founded the first cities, *Civilization* games track the progress of humanity from basic tools and agricultural accomplishments all the way to interplanetary travel. While part of the fun of the *Civilization* games can be the humorous anachronisms and juxtapositions of historical facts (founding Buddhism in London, constructing the Brandenburg Gate in Seattle, etc.), *Civilization* games attempt to use rules to describe real-world systems and to model actual interactions. Each new *Civilization* game starts with the desire to model history thorough this god-king lenses, but attempts to differentiate itself from the one that came before by modifying rule sets, and adding new forms of interaction.

The decision to make a science fiction game after *Civilization V* was easy from a business perspective. For one thing, there was precedent: *Beyond Earth* was marketed as the spiritual successor to the wildly popular *Sid Meier's Alpha Centauri* (1999). Like *Alpha Centauri*, *Beyond Earth* picks up where most *Civilization* games stop: human conquest of new planets. The time between *Civilization IV*'s final expansion *Beyond the Sword* (released in July 2007) and *Civilization V*'s first release in September 2010 was over three years. By contrast, between *Civilization V*'s final expansion *Brave New World*, released in July 2013, and *Beyond Earth*, released in October 2014, Firaxis spent a comparatively short year and a half. In

updating their graphics, *Civilization V* transitioned from the *Civilization IV* Gamebryo to the Firaxis LORE engine (*Civilization IV*, n.d.; *Civilization V*, n.d.); *Beyond Earth*, however retained the Firaxis LORE engine (Tito, 2014). Not only does *Beyond Earth* use the same engine as *Civilization V*, it also clearly reuses certain graphical assets from *Civilization V*s. The overhead view, the use of a hexgrid, the movement of units, and even the placement of information along the edges of the screen are very similar to *Civilization V*. At the most basic level, *Beyond Earth* takes mechanics from *Civilization V*: the slow, one-hex-at-a-time acquisition of neighboring land via culture, initial boosts to culture and production in the form of ruins and wreckage, and the presence of indigenous inhabitants are all very similar in both games. This reliance on spolia allowed *Beyond Earth* to be released more quickly than a traditional *Civilization* iteration, so in this way, *Beyond Earth* spoliated *Civilization V* for its own practical purposes.

Symbolic Spoliation

Only looking at the practical reasons for ludic spolia misses some of the most interesting things about *Beyond Earth*'s use of and relationship to *Civilization V*. The purely practical side of spoliation does not account for *why* people feel nostalgia for a gaming franchise, nor does it deal with the moral, psychological, and rhetorical problems associated with reuse. Finally, and perhaps most interestingly, the subtle changes that take place within an iterative gaming franchise are easy to lose sight of en masse, but are vitally important to the history of the game(s).

Art historians such as Richard Krautheimer and Beat Brenk have criticized purely pragmatic positions on spolia. They argue that the spoliation by Constantine, and other emperors and kings after him, constituted an "impressive protective and aesthetic measure" motivated by the symbolic power of spolia (Brenk, 1987, p. 106) and the importance of public architecture (Krautheimer, 1980). While neither have argued for a purely symbolic understanding of spolia, they remind us that reuse is very rarely value-neutral:

As early as the era of Constantine, columns, capitals, and architraves of old buildings were reused in new structures. [...] When someone removes the hide of a building or tears out its innards, he resembles a cannibal. A cannibal does not devour his enemies mainly because he hopes that in so doing he will acquire his destroyed enemy's strength. [...] [I]deology plays a far greater role with cannibals than aesthetics (Brenk, 1987, p. 103)

From the perspective of symbolic spoliation, spolia communicate a complex, ambivalent message about the past: the past is disrespected (because it is taken apart), but it is venerated (because it is preserved); the past is disrespected (those creating the future want it to be different from the past) but it is reclaimed (those creating the future seek to derive legitimacy, at least in part, from their connection to the past). While legitimacy for the new creation is derived from the past, the distance between the old and the new creation (whether it be a building or game) creates opportunities to challenge the ideology and narrative

imbedded in the original.

Controlling spolia's effects is notoriously difficult, and often facilitates a reinterpretation of the past; hence Christian architects and theologians used the spolia of pagan temples and the writings of pagan philosophers to reinterpret the past as paving the way for Christ:

The view that pagan culture was part of a divine plan to prepare the world to receive the ultimate truth was firmly established [...] Ancient monuments, both buildings and statues, were powerful manifestations of ancient culture and could be 'Christianized' on the grounds of their artistic value or as valuable means of allegoric reinterpretation. (Saradi, 1997, p. 403).

In a surprisingly similar way, exposure to a new game that contains spolia from a previous game can create a critical distance that allows the player to reinterpret and reconsider the original. Faced with unmistakable spolia at nearly every turn, *Beyond Earth* provides a generative case study. By using an object and rule-centered analysis, I argue that within an iterative gaming franchise like *Civilization*, each rule retained and each system changed reverberates through players, having a magnified effect. Just as in the case of spolia, particularly for players who are familiar with a franchise, even seemingly small changes in mechanics and rules take on greater significance within the new work. The following sections focus on elements from *Civilization V* that *Beyond Earth* spoliated, recontextualized, and ultimately challenged: Barbarians, the Technology Tree, and Ideologies. While these spoliated elements were undoubtedly pragmatic for Fraxis, they also take on symbolic significance and upset the traditional *Civilization* narrative.

Barbarians and Aliens

Barbarians are some of the first obstacles the player encounters in *Civilization V*. They indiscriminately attack military units, enslave workers and settlers, and destroy tile improvements. In the early game, these assaults on the empire can be staggering: the loss of a warrior or a scout can limit a player's access to early-game bonuses (such as meeting City-States first or exploring ruins) and also curtails exploring the planet to learn its geography. Killing Barbarians can also function as more than a purely defensive measure if the player adopts the first level of the Honor Policy, which will grant the civilization Culture each time it kills a Barbarian. Given the sheer number of Barbarians in most *Civilization V* games, many players choose to adopt this Policy, meaning that they then seek out Barbarians to destroy.

Later in the game, Barbarians and their camps are minor nuisances; they are easily destroyed by the player's much more technologically advanced units, but if left alone, they are still capable of capturing workers and devastating the countryside. It is not until late-game *Civilization V* that the special ability to convert Barbarians with Missionaries can be adopted, allowing Barbarians to become recruitable military units. Further, as this ability is limited to civilizations which have adopted a specific set of religious practices and undergone a 'Reformation,' most players are not in the position to use this feature very often. Thus, the

Barbarians remain a nuisance in most situations; they are items to be destroyed as soon as possible so that the player may be rewarded with Gold, Culture, and Unit Experience.

Indigenous inhabitants are spolia that *Beyond Earth* takes from *Civilization V* (although other *Civilization* games have also included Barbarians). A player of *Beyond Earth* who has played *Civilization V* will thus approach *Beyond Earth's* Aliens with several pre-existing ideas for how to deal with indigenous populations.

Aliens are more numerous than Barbarians, and in marked contrast to the monolithic Barbarians (who all share the same flag and look exactly the same,) the Aliens are a heterogeneous group united by a mysterious hive mind. While some types of Aliens are more aggressive (like Siege Worms and Krakens) many Aliens are content to wander through the landscape without molesting players' units. This peaceable state is easily changed, however, if the player decides to systematically confront the Aliens.⁵ Through their link with the hive mind, any escalation of hostilities with one set of Aliens causes more aggressive behavior in subsequent encounters with other Aliens across the map. With the *Rising Tide* expansion, certain civilizations can gain the ability to "Leash" aliens. While the Explorer takes damage from the assault, a leashed Alien becomes another military unit under the player's control.

After interacting with the more nuanced and complicated Aliens in *Beyond Earth*, *Civilization V's* indiscriminately violent Barbarians look excessively brutish. Being able to make more meaningful choices about Aliens unmasks the colonialist attitude towards indigenous humans that sits at the heart of a project like *Civilization*. The concept of civilization, after all, is defined in part by othering different social structures (Said, 1979). The *Civilization* franchise, like all 4X games, takes as a given the mandate to explore, expand, exploit, and exterminate (Zacny, 2016). Aliens allow players the space to question whether we should exterminate Barbarians, as well as whether there are other words we might use to describe people who live outside of the confines of cities.

Essentially, Aliens are spoliated Barbarians: their presence controls much of the early game decisions a player makes. The fact that the player has been taught to eradicate (or at least convert) Barbarians in *Civilization V* bleeds over to the player's initial assessment of Aliens in *Beyond Earth*. As we will see, just as the Technology Web questions the teleological commitments of *Civilization V*, *Beyond Earth* plays off of these initial assumptions and provides a different way of imagining our responses. We will also see that the ability to behave ambivalently towards the Aliens (killing a few pesky Siege Worms but harming no Nests) is a deliberate choice within the game's structure. Interestingly, one's attitude towards Aliens does not necessarily preclude any particular type of victory, and can be seen as a strategic way to stop problems within the civilization's borders. This can make good strategic sense, because if a civilization's cultural borders extend over an Alien Nest, this nest is eventually automatically recruited to help defend the civilization if attacked from an outside foe. A happily ambivalent stance is possible in addition to outright war or mutual adaptation, making the Aliens much more complex and interesting than *Civilization V's* Barbarians;

they lend themselves to many different play styles.

Technology Trees and Technology Webs

Spolia in *Beyond Earth* is not confined simply to the external threats the player's civilization must face. Internally, the competing demands of Research, economy, infrastructure, and military capacity function as a complex system of checks and balances within the *Civilization* franchise. Too little capital (either from ambitious city improvements or large military costs) can keep a civilization from researching new Technologies at the same pace as its neighbors. Eventually, failing to keep up or surpass other civilizations results in economic or military failure.

Research, and more specifically the acquisitions of discrete game elements called Technologies, facilitate progress through the *Civilization* games: they enable the player to build different types of military and civilian units, different buildings for cities, and allow new types of diplomacy; the more Technologies a player has acquired, the more nuanced decisions she can make in terms of what to build and how to develop her empire. Research is the backbone of any civilization, and forces the player to make decisions and set priorities. Technologies can only be researched one at a time, so the needs of the whole empire must be considered – does the player need the ability to create pastures for Cows and Horses (Animal Husbandry) or should she develop the ability to create Plantations in order to harvest Bananas and Spices (Calendar)?

Civilization V follows the traditional *Civilization* model: Technologies are placed in a hierarchical tree, with some Technologies acting as gatekeepers for others. This Technology Tree models and argues for a teleological framework in the progression of human knowledge, positing that knowledge is acquired in a straightforward manner. Tuur Ghys (2012) argues that, “the tech tree model can embody technological determinist assumptions in (at least) three ways: by forcing a set sequent, by influencing social changes in history by characterising (thus determining) era and civilizations.” In line with the Enlightenment project of categorization and cataloguing, as well as an unshakable faith in progress, the Technology Tree in *Civilization V* prescribes and rationalizes a linear progression through human history. Not only are some Technologies necessary in order to research others, Technologies are vertically grouped into Eras (Medieval, Renaissance, Industrial, Future etc.) to show the growth, development, and betterment of society. Reaching a new era is often rewarded in a variety of ways, and is a status marker for each civilization.

Technologies are value-neutral in *Civilization V*, with almost all of the Technologies (until the very, very end of the game) necessary for military, cultural, and economic survival. While some Technologies (such as Mining) are universally helpful because they provide the ability to develop the natural world (in and of itself a type of value claim about the ways we are supposed to use our planet), other Technologies facilitate less savory activities, like espionage and war. For instance, the Chivalry Technology is overwhelmingly concerned with warfare (it is necessary to build Knights, a powerful cavalry unit, as well as Castles which increase the defensive bonuses of cities), but a player must research it in order to

get to Banking, which is much more concerned with economic prosperity. Thus, even if a player has no intention of pursuing a military victory, she must research Chivalry at some point. Its strategic placement before Banking and its critical role in military efficacy often entices the player to research Chivalry as early as possible. Thus, in this and many other ways, *Civilization V* models the interdependence of all types of knowledge. In line with its humanistic framework, the *Civilization V* Technology Tree endorses an expansive narrative of human development, where remote disciplines can still provide insights into other domains. Knowledge is hierarchical, and most knowledge (at least from the earlier eras) is necessary for most victories.

As the Technology Tree is the same for all players, there is strategy in deciding what to research first, but ultimately all the players are questing for the same thing: to get to the end of the tree as quickly as possible, whether or not the player ends up using the individual Technologies for their intended purposes. Particularly with the acquisition of a technology like Chivalry, the player can decide whether or not to sink money into upgrading their pre-existing Horsemen units into Knights. Technology, while very important, does not impart value or necessarily connote the player's overall strategy within *Civilization V*. Research progression is simply another statistic that the player seeks to maximize in order to make sure she is not eclipsed by the other players. The Technology Tree is a pure rat race, and argues for acquisition of all types of knowledge, irrespective and uncaring about the ways these Technologies can ultimately affect the societies that research them.

Perhaps there is no better example of this than the relationship between Atomic Theory and Ecology. Atomic Theory allows for the construction of the Manhattan Project. Until a player constructs the Manhattan Project, she cannot build nuclear weapons. While it is not necessary to construct the Manhattan Project itself, Atomic Theory is a gatekeeper for the Ecology Technology. Ecology is overwhelmingly involved in improving the production of cities, with the Recycling Center building providing Aluminum, and the Solar Plant providing a flat production bonus. This search for clean production necessitates that the player repeat the same (misguided?) steps that humanity has already attempted. When understood through the lens of the Technology Tree, however, the advent of the possibility of nuclear war is justified because it leads to protecting the planet and enhancing the player's civilization. It makes such historical facts feel necessary and unavoidable. It reinforces the descriptive trajectory of our technological advancements, and argues for that path being the only way things could have happened. We *did* research nuclear technologies before we really concerned ourselves with our conservationist technologies, and permuted through the logic of *Civilization V*, we *ought* to have done so.

Beyond Earth also does not allow the player carte blanche abilities at the beginning of the game; like all *Civilization* games, part of the fun is the slow acquisition of Technologies that facilitate more and more interesting choices and gameplay. Players familiar with *Civilization* immediately detect the Technology spolia; *Beyond Earth* even places the icon to access Technology process in the exact same part of the screen (the upper left-hand corner). In marked contrast to *Civilization V*, however, *Beyond Earth* utilizes a rhizomatic Technology

Web instead of a Technology Tree.

This change reverberates throughout the game. No longer faced with a linear progression from left to right, a player of *Beyond Earth* is instead confronted with an overwhelming web of choices. The fact that there are filters the player can toggle on and off for the Web reaffirms that many players are likely to be unsure exactly how to navigate it. For players used to seeing Technologies laid out in a straightforward manner, subdivided into paths and Era, the layering of Technology Web in *Beyond Earth* is startling.

Beyond simply *looking* at the Technology Web, interacting with the Technology Web creates a host of other concerns. While it takes several playthroughs, it becomes apparent that some Technologies are broadly applicable (the Pioneering Technology is the only way to learn to build Colonists, which are the only way to create new cities), a great many of the technologies are not necessary for every type of victory. Indeed, because it takes comparatively longer to research Technologies, the choices within the Technology Web take on greater significance. While in *Civilization V* almost all technologies are necessary until the final Future era, in *Beyond Earth* it is easy to not research over half of the possible Technologies. Also, while some Technologies are more time-consuming to research than others, even powerful end-game Technologies only have two or three prerequisite Technologies. The Technology Web is much less hierarchical and allows the player quite a bit of room to maneuver. This recalls Deleuze and Guattari's (1980/1987) rhizome, which posits a decentralized network that allows quick connection to any other part of the network: "any point of a rhizome can be connected to anything other, and must be. This is very different from the tree or root, which plots a point, fixes an order" (p. 7). The ability to jump around between Technologies is quite important not just because specific Technologies will enhance the civilization's Affinity (which I will discuss shortly) but also because of the underlying logic of *Beyond Earth*. Pure technologic advancement is not an unqualified good in *Beyond Earth* the way it is within *Civilization V*. Within *Beyond Earth*, technology is scrutinized from a postmodern vantage point. Technology and research agendas are not neutral, and our choices about what to research will have specific ramifications for our civilizations and for our planet.

The choice to spoliage Technologies is not surprising; indeed, some form of technology tree is one of the hallmarks of the *Civilization* franchise. Players have come to expect Research, and spoliating Technology is highly pragmatic. The side effect of the spoliated Technologies recontextualized within a different progression schema, however, challenges the historical Technology Tree. Technology in *Beyond Earth* uses a mechanic all *Civilization* players are deeply familiar with, but changes the ways players interact with Technologies, thus creating room for the player to question the original. Like most instances of spolia, this questioning and derision of the original would not be possible without historical familiarity. Once a player has interacted with the Technology Web, the lock-step nature of *Civilization V*'s Technology Tree becomes apparent, along with its implicit Enlightenment biases.

Ideologies and Affinities

One of the main reasons a player will research so many fewer Technologies in *Beyond Earth* is that researching specific Technologies will move the civilization towards a different Affinity or Hybrid Affinity. Therefore, players must not only consider what actions a Technology will allow their civilization, but also whether or not the Technology moves them closer to their chosen Affinity. Affinities represent the civilization's underlying philosophy, summing up the civilization's views on the nature of humanity, the appropriate relationship between humans and the alien environment, and the proper role of technology. The three Affinities are Supremacy, Purity, and Harmony, and although the *Rising Tide* expansion allows for greater hybridization between these Affinities, players will need to decide which Affinity best suits their civilization, and will need to do so fairly early on in the game

Affinities are easily recognized as spoliated versions of the Ideologies in *Civilization V*. The main difference between them is the timeline on which the player interacts with them. Ideologies in *Civilization V* are one of the last in a long line of choices, while in *Beyond Earth*, Affinities are selected early and have ramifications throughout the whole game. As a late-game mechanic, Ideologies are helpful, but most Ideologies will allow almost any type of victory. In keeping with the timeline of *Beyond Earth*, Affinities are the first and not the last thing for a player to consider. This is a fundamental change in how play works, forcing the player to choose a philosophical path for her civilization much more quickly than in *Civilization V*. Additionally, because many Technologies will move the civilization towards a specific Affinity, many buildings and abilities are not available to the player because of her chosen Affinity.

While several typical *Civilization* victories (such as domination through war) are possible with any of the Affinities, each Affinity also has its own special way to achieve victory. The Purity Affinity attempts to retain what makes us human, even on a new planet. The Supremacy Affinity closes the distance between humans and machines in order to survive on the new, hostile planet—they are a paragon of transhumanism. Finally, the Harmony Affinity mixes the biology of Earth with the biology of this new world, charting a wholly new future for a modified humanity. While these Affinities affect how a player might try to claim victory, they also play a part in most of the other choices a player makes during the course of the game. Unlike *Civilization V*, where most units can be built by all civilizations, *Beyond Earth* has a commitment to personalization and evolution evident in most choices. Unlike being able to pay currency for a Warrior to become a Swordsman and then for the Swordsman to turn into a Longswordsman in *Civilization V*, in *Beyond Earth*, a player must level up her Affinity in order to increase the power of her military. Gaining a new level in an Affinity will automatically upgrade all present and future military units, without additional cost. Without sufficient specialization in one of the three Affinities (or a calculated decision to pursue a forked Affinity), the player's military will be hopelessly outmatched and her civilization will be vulnerable to attack. Furthermore, several of the victory conditions for *Beyond Earth* are linked to substantial Affinity progression, making it very hard to win if one does not wholeheartedly commit to an Affinity. The advent of Hybrid Affinities within the *Rising Tide* expansion makes the research component of Affinity development all the

more important. Similar to other games (and life in general), trying to become a specialist in two discrete areas requires total dedication to the twin path, and leaves little room for improvisation within the Technology Web.

Mechanically speaking, the Affinities become a place where the priorities of a player's Research make themselves manifest. This is a clear departure from *Civilization V*, the mechanics of which allowed for much more discrepancy between Research, military power, and Social Policies. Within *Civilization V*, Social Policies (which are essentially status effects for a civilization purchased with Culture) are discrete from technological advancement. The Social Policy grove has many different trees a player can expand upon, each granting different types of bonuses. These range from Patronage, which enhances a civilization's ability to maintain prosperous relationships with City-States, to Honor, which allows for military advantages. As Technology and Social Policies are not necessarily related, a civilization could cultivate a highly pious population, all the while researching Astronomy and Space Flight. The civilization could develop on the Honor path of Social Policies (which is focused on improving the civilization's military), and yet fail to prioritize acquisition of military technology.

While good players will often try to build synergy between their Technologies and Social Policies, part of the pressure of *Civilization V* is continually reassessing one's Social Policies and making changes if necessary. They are more adaptable as gameplay progresses, and divergent combinations do not necessarily lead to defeat. Furthermore, there are distinct advantages to developing many concurrent Social Policies. Taking the first level in Honor, for instance, allows the player to generate culture from killing Barbarians. If taken early enough in the game, this first step on the path of Honor is a natural choice given how many Barbarians the player will undoubtedly kill, regardless of her overall strategy. Finally, the player might not necessarily be cognizant of this disconnect between Social Policies and Technologies in *Civilization V* because it typifies many of our current budgetary and social disconnects (Kain, 2011). We are, clearly, used to and desensitized by our research goals not aligning with our purported societal priorities.

Beyond Earth reevaluates this discrete view of human development, drawing attention to this tension between Culture and Technology within *Civilization V*. By using concepts and mechanical devices the player is familiar with, this critique of society is heightened and sharpened. I do not mean to claim that players who have never played *Civilization V* will not be aware of this critique, but rather that intimate knowledge of the original game makes this critique more articulable. Knowing that Marcus Aurelius was considered a just and fair man makes the compliment to Constantine very apparent on his triumphal arch. In a very similar way, seeing Technology and social goals wed within one larger metric in *Beyond Earth* argues for a new way to understand ourselves and chart a unified future.

The Affinity system picks up almost directly where Ideologies in *Civilization V* left off, and the implications to the player are clear. Our time on Earth has made us cognizant of the ramifications of research and left us with the need to define a goal for our society early; every

Technology we Research has ramifications on the path our civilization will take. Not only does *Beyond Earth* spoliates *Civilization V*'s Ideologies, but it recasts them as choices that must be made sooner. By forcing the player to confront spoliated Ideologies sooner (under the guise of Affinities), *Beyond Earth* communicates a clear message to the player: our future must both be built on the past and learn lessons from it. If we can hope to survive, we need to be more aware of the interplay between Technology and social commitments.

Beyond Earth: You Don't Belong Here

Outside of Aliens, the Technology Tree, and Affinities, there are countless other examples of spolia in *Beyond Earth*. Many of these other examples of spolia serve to highlight the harshness of space. In particular, Stations, miasma, and the temporary nature of many upgrades force the player to confront this hostility. This design choice has the unintended side effect of problematizing earlier *Civilization* games' assumptions about the Earth's inherent suitability for human habitation.

A key example is their implementation of Stations. Like *Civilization V*'s City-States, Stations are AI players who are not competing to win the match. Their inclusion within *Civilization V* was a radical departure from previous *Civilization* games, and their presence added layers of diplomatic depth; City-States were a very new addition to the *Civilization* model, and thus it was a pragmatic choice to include their spoliated version, Stations, in *Beyond Earth*.

The competitive civilizations constantly contend with the presence and demands of the City-States. These demands often include tasks, such as killing Barbarians, gifting them gold, establishing a trade route with them, converting them to a specific religion, and helping them ward off other civilizations who try to invade and conquer them. They add complexity and intrigue to diplomatic relations, not only because their votes are necessary for the player to win a Diplomatic Victory, but also because their well-being can be central to the economic survival and happiness of the player's own civilization.

However, unlike the relatively autonomous City-States, *Beyond Earth*'s Stations often must be approved by a player in order to come into existence and all need an active trade route to thrive. They exist in a tenuous state—without constant upkeep on the part of the player or (other competitive AI) they are liable to fail. The Stations are a cypher for how much more brutal *Beyond Earth* feels—every victory can easily become a defeat. A once-prosperous Station can still end up fading away, for without a trading partner they cannot sustain themselves. The only real obstacles for City-States are player and AI conquests, but *Beyond Earth*'s planet is openly hostile to the Station's survival.

Nowhere is this global hostility as preeminent as with the ever-present toxic Miasma, a greenish mist that covers many hexes at the beginning of the game. At the start of a game, Miasma will hurt the player's units and help Aliens regenerate health. Although players eventually learn to either use Miasma (Harmony) or clear it out (Supremacy or Purity), the hostile nature of the planet is an important initial concern that limits much of the player's movement and exploration.

Beyond Earth's focus on a hostile environment lends itself to preoccupations with spoliation. While vanilla *Beyond Earth's* “crash sites” and “resource pods” were almost carbon-copies of *Civilization V's* ruins, *Rising Tide* added the ability to find “artifacts,” many of which are remains of Old Earth. These artifacts can be permanently and irrevocably combined with other relics to generate new building schematics and provide one-time civilization bonuses. Relics, like many other objects in *Beyond Earth*, are meant to be consumed.

Orbital units are another new aspect to *Beyond Earth* that takes seriously the lifespan of technology and infrastructure. After they are launched, they provide some sort of strategic advantage for the hexes they hover above (they can provide extra defense, extra production, extra energy, etc.). They are not permanent upgrades, however, and last only a set number of turns before crashing back to the planet. *Beyond Earth* is full of this idea of obsolescence and reuse. Unlike *Civilization V*, which would let players leave one sad archer in their capital city for the entire game, in *Beyond Earth*, as military might grows with Affinity progression, *all* of the player's units are leveled up. This waste-not, want-not philosophy makes thematic sense, and points towards the overarching philosophical differences between *Beyond Earth* and the canonical *Civilization* games.

These changes and the recontextualization of existing *Civilization V* ideas and mechanics serve to reinforce the themes of *Beyond Earth*. These themes include the relative harshness of the new planet in comparison to Earth and the necessity that these new civilizations must learn from the mistakes of the old (*Civilization V*). The interplay of spoliated elements and new ideas (such as Miasma) facilitates *Beyond Earth's* underlying, and possibly inadvertent, critique of *Civilization V's* ideology.

Conclusion

In most cases of architectural spoliation, the original piece of architecture is forever marred and often destroyed in order to create the new pieces. With ludic spolia, as I have shown, the newer game may not necessitate the destruction of the original, but it does call many of the original's design choices into question. For a player acquainted with *Civilization V*, there is not only “a nagging sense of manipulating the same levers and buttons with taped-over labels” (Peckham, 2014) within *Beyond Earth*, but also a sense that something has fundamentally changed. Its use of Aliens, the Technology Web, and the Affinity system challenge the heart of the *Civilization* formula. This is a true case of spoliation—something old is taken apart, reconsidered and changed into something new that still depends on the context of the old. The points *Beyond Earth* makes are magnified with knowledge of *Civilization V*. *Beyond Earth* takes seriously a new question of world building instead of just historical rationalizing. Instead of trying to provide a way to understand what historically happened/happens via rules, it uses rules and telling modifications of rules we are already familiar with to chart a new future. This decision was both economically practical and ideologically symbolic.

The fiction and mechanics of *Beyond Earth* picks up where *Civilization V* leaves off. Our time on Earth has made us cognizant of the ramifications of research and the need to quickly

define goals for our society. Through various acts of spoliation, *Beyond Earth* sends the player a message: our future must both be built on the past and learn lessons from it. We must reimagine our relationships with indigenous peoples, which is increasingly imperative in this era of post-colonialism, climate change, mass extinction, etc. We must reconsider our value-neutral approach to research. We must reassess how we wish to interact with our bodies and our planet. *Beyond Earth's* spoliation of *Civilization V* critiques the entire *Civilization* formula, and has ramifications not only for game design, but the potential to change the ways we relate to our current time.

More broadly, this analysis of *Beyond Earth* serves as an excellent example of the power of spolia in game design, and the value of the term for game studies as a whole. As an analytic tool, spolia's historical connection to the more powerful members of societies (emperors, kings, popes, etc.) reminds us that we should resist only thinking about marginalized artists, gamemakers, and players' acts of appropriation. While individuals' reuse of mechanics, visuals, and game engines is frequently pointedly subversive, they are not the only people to interact with appropriation. Even if developers only resort to spolia out of practical economic necessity, they must confront the fact that as they reuse assets, mechanics and ideas, they create distance that allows for those original ideologies to be challenged. Even as they may work to quietly replicate ideologies embedded in earlier games, these acts of digital spoliation necessarily function as a critique of earlier systems and reveal the underlying assumptions of the original games.

Endnotes

1. Parts of this paper are taken from my unpublished Masters' thesis (McNeil, 2014).
2. As of the writing of this article, *Civilization V* has a 90 Metascore on on Metacritic.com: "With over nine million units sold worldwide, and unprecedented critical acclaim from fans and press around the world, Sid Meier's *Civilization* is recognized as one of the greatest strategy franchises of all-time" (Metacritic, 2010).
3. See Colin Campbell (2014), who attests that *Civilization V* players can jump right into *Beyond Earth*; see Matt Peckham (2014), who wonders why *Beyond Earth* needed to happen at all because it is so similar to *Civilization V*; see Lucious Barnes (2014), who discusses the ways *Beyond Earth* coopts systems from *Civilization V* and has different tutorial options for those who have and have not played *Civilization V*.
4. This is not to say that older games are necessarily eclipsed by their sequels. *Civilization IV* still has a devoted following.
5. This has become especially true with the *Rising Tide* expansion, which made accidentally destroying alien Nests impossible by requiring the player to affirmatively pillage them instead

of simply moving on top of the Nests' hex.

References

- Anthropy, A. (2012). *Rise of the videogame zinesters: How freaks, normals, amateurs, artists, dreamers, dropouts, queers, housewives, and people like you are taking back an art form*. New York: Seven Stories Press.
- Archermeres, J. (1994). Spolia in roman cities of the late empire: Legislative rationales and architectural reuse. *Dumbarton Oaks Papers*, 48, 167–178.
- Barnes, L. (2014). Beyond your expectations—Sid Meier's civilization: Beyond Earth review. *Gaming Trend*. Retrieved from <http://gamingtrend.com/reviews/beyond-expectations-sid-meiers-civilization-beyond-earth-review/>
- Bogost, I. (2007). *Persuasive games: The expressive power of videogames*. Cambridge, MA: The MIT Press.
- Bourriaud, N. (2002). *Postproduction*. New York: Lukas & Sternberg.
- Brenk, B. (1987). Spolia from constantine to charlemagne: Aesthetics versus ideology. *Dumbarton Oaks Papers*, 41, 103–109.
- Burkinshaw, R. (2009). Alice and Kev: The story of being homeless in The Sims 3 [Web log post]. Retrieved from <https://aliceandkev.wordpress.com/>
- Campbell, C. (2014). Civilization: Beyond Earth Review: Starstruck. *Polygon*. Retrieved from <http://www.polygon.com/2014/10/23/6880933/civilization-beyond-earth-review-pc>
- Civilization IV. (n.d.). *Civilization: Official Wikia*. Retrieved from http://civilization.wikia.com/wiki/Civilization_IV
- Civilization V. (n.d.). *Civilization: Official Wikia*. Retrieved from http://civilization.wikia.com/wiki/Civilization_V
- Clark, T. (2012). The Most Dangerous Gamer. *The Atlantic*. Retrieved from <http://www.theatlantic.com/magazine/archive/2012/05/the-most-dangerous-gamer/308928/>
- Coberly, W. (2016). Jon Blow and the need for genius. *The Ontological Geek*. Retrieved from

<http://ontologicalgeek.com/jon-blow-and-the-need-for-genius/>

- Deleuze, G. & Guattari, F. (1987). *A thousand plateaus: capitalism and schizophrenia*. (B. Massumi, Trans.). Minneapolis, MN: University of Minnesota Press. (Original work published 1980).
- Elsner, J. (2000). From the culture of spolia to the cult of relics: The arch of Constantine and the genesis of late antique forms. *Papers of the British School at Rome*, 68, 149–184.
- Flanagan, M. (2009). *Critical play: Radical game design*. Cambridge, MA: The MIT Press.
- Ghys, T. (2012). Technology trees: Freedom and determinism in historical strategy games. *Game Studies*, 12(1). Retrieved from http://gamestudies.org/1201/articles/tuur_ghys
- Gibson, S. (2012). Dadaist game art: The digital ready-made and absurdist appropriation. *Media-N: Journal of the New Media Caucus*, 8(2). Retrieved from <http://median.newmediacaucus.org/blog/current-issue-fall-2012-v-08-n-02-december-2nd-2012/dadaist-game-art-the-digital-ready-made-and-absurdist-appropriation/>
- Greenhalgh, M. (2011). Spolia: A definition in ruins. In R. Brilliant & D. Kinney (Eds.) *Reuse value: Spolia and appropriation in art and architecture from Constantine to Sherrie Levine* (pp. 75–95). Surrey: Ashgate.
- Kain, E. (2011). Do americans care more about war than education? *Forbes*. Retrieved from <http://www.forbes.com/sites/erikkain/2011/04/17/do-americans-care-more-about-war-than-education/>
- Kapell, M. & Elliot, A.B.R. (2013). *Playing with the past: Digital games and the simulation of history*. New York: Bloomsbury.
- Kinney, D. (2001). Roman architectural spolia. *Proceedings of the American Philosophical Society*, 145(2), 138–161.
- Kinney, D. (1997). ‘Spolia damnatio’ and ‘renovatio memoriae.’ *Memoirs of the American Academy in Rome*, 42, 117–148.
- Krautheimer, R. (1967). The constantine basilica. *Dumbarton Oaks Papers*, 21, 115–140.
- Krautheimer, R. (1980). *Rome: Profile of a city, 312-1308*. Princeton, NJ: Princeton University

Press.

McNeil, E. (2014). World building with virtual follies: The rhetoric of ruins in videogames (Unpublished masters thesis). Savannah College of Art and Design (SCAD), Savannah, Georgia.

Metacritic. (2010). Sid Meier's Civilization V. *Metacritic*. Retrieved from <http://www.metacritic.com/game/pc/sid-meiers-civilization-v>

Neto, B., Fernandes, L., Werner, C., & de Souza J. (2010). Developing digital games through software reuse. *Journal of Information Processing Systems*, 6(2), 219–234.

Pitts, R. (2014). Civilization: Beyond Earth. *PC Gamer*. Retrieved from <http://www.pcgamer.com/civilization-beyond-earth-review/>

Peckham, M. (2014). Civilization: Beyond Earth doesn't offer players anything new. *Wired*. Retrieved from <http://www.wired.com/2014/10/civilization-beyond-earth-review/>

Raphael, Castiglione, B. (2006). Letter to Leo X. In V. Hart & P. Hicks (Eds.), *Palladio's Rome: A translation of Andrea Palladio's two guidebooks to Rome (177–192)*. New Haven, CT: Yale University Press. (Original work written c. 1519).

Rosenthal, N. (2004). Marcel Duchamp (1887–1968). *Heilbrunn Timeline of Art History*. Retrieve from http://www.metmuseum.org/toah/hd/duch/hd_duch.htm

Said, E. (1979). *Orientalism*. New York: Vintage Books.

Saradi, H. (1997). The use of ancient spolia in byzantine monuments: The archaeological and literary evidence. *International Journal of the Classical Tradition*, 3(4), 395–423

Solomon-Godeau, A. (2003). Art photography and postmodernism. In L. Wells (Ed.), *The photography reader (152–163)*. New York, NY: Routledge.

Strik, O. (2015). Beyond Baldur's Gate. *Five Out of Ten*.

Tito, G. (2014). Civilization: Beyond Earth Could Be Alpha Centauri 2 without the Name. *The Escapist*. Retrieved from <http://www.escapistmagazine.com/articles/view/video-games/previews/11268->

Zacny, R. (2016). The 4X genre has grown stagnant, here's how to fit it. *Rock, Paper, Shotgun*. Retrieved from <https://www.rockpapershotgun.com/2016/03/07/how-to-fix-the-4x/>