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Abstract

Continuing a legacy begun with cyberspace’s metaphorical alignment with explorable “frontiers,” videogames (re)mediate environmental aesthetics and spatial experience. To examine this phenomenon, this thesis begins dissecting the trope of ecological recovery. This structuring logic redeploy Cartesinian dualism and purity politics while addressing the player’s desire to enact a meaningful connection with “nature.” The subsequent analysis builds from this tension between the game’s structuring logics, which endorse violent rhetorics of mastery and control, and the player’s affective attachment to “greenness” as such. Chapter 1 defines the aesthetics of open world game design to unwind the ethical orientations this design model both inhibits and facilitates. This unwinding characterizes open world as a design practice that articulates unbounded freedom while occluding its own limitations. While the logic of open world instrumentalizes player exploration, this chapter positions the ambiguous practices of slow wandering as defiant of the violent consumption of space. To further untangle how games organize player desire and organize the player’s experience of space, Chapter 2 describes developments of map designs in the Legend of Zelda franchise as a case study. These maps enforce the system’s strategic practices, interpellating the player as romantic explorer, master of landscapes, and colonialist. Chapter 3 develops a system of categorization for understanding how nonhuman animals signify and function in games and how they determine player orientations. Together, these interrogations concentrate on specific aspects of the game experience to
demonstrate how games not only train players in certain subjectivities but also translate player desires to the screen. Digital games, as the defining medium of our time, sublimate the desires that the contemporary consumer subject holds toward environments. The study of these games and their environmental aesthetics allows us to interrogate these desires and their relationship to the structuring logics of this moment in contemporary capitalism.
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INTRODUCTION

The subfield in which ecocriticism and game studies converge has been called by some scholars “green game studies.”\(^1\) Much of the work comprising this field focuses on places or moments in which games can provide fertile ground for developing an “environmental consciousness” or “ecological awareness.”\(^2\) Other models critique the modes and aspects in games that fail to present a responsible orientation toward environments. Between these two approaches, there remains work to be done on the ambiguous and contradictory nature of how games articulate environmental aesthetics. This project seeks to contribute to such work.

Most work in this subfield begins with a nod to the material conditions through which video games destroy the environment. As Elizabeth Grossman shows in *High Tech Trash*, the proliferation of new devices generates an interlocking network of dangerous and reverberating effects.\(^3\) In an article that played a part in establishing the name “green game studies,” Colin Milburn outlines how the 2000 launch of the PlayStation 2 impacted military conflicts in central Africa. The high demand for the new console drove up the prices for the mineral coltan (columbite-tantalite), used to make capacitors. These higher prices fueled the escalation of violent conflicts in the area, and the high demand drove the exploitation of children and prisoners of war in the coltan mines.\(^4\) This is only one of many examples of how videogames function in a

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\(^1\) Alternative terms include “sustainable media,” “eco-media,” or “green popular culture,” but all gesture toward the same idea of “greenness.”


\(^4\) Milburn, “Green Gaming,” 201-203.
network of exploitation and violence. Discarded consoles pile in landfills, leaking toxins, or endanger the lives of laborers offshores who process the remains of scrapped hardware.

This kind of critique suffers a paradox: green game studies will never truly be “green.” Even in his original article on green gaming, Colin Milburn admits that this terminology may seem suspect or even “perverse.” Yet this subfield constantly struggles with its desire to discover and excavate radicality in gameplay. Writing about an environmental consciousness brought about by an industry that functions because of the brutality of these networks of exploitation feels like something of a farce. An ideal green-ness will never be the end result of this kind of critique. In fact, the very term “green” connotes a specific set of rhetorics borne of a desire to feel and act a certain way about “nature” and “the environment.”

Both the material conditions and the experiences of playing these games speaks to an orientation toward the world and to a set of desires that articulate what we want “nature” and our relationship to it to look like. Through their fantastical and often magnificent renderings of lush landscapes, videogames suggest that the destruction of certain environments and the abuse of certain peoples is necessary for the preservation of separate, sacred, and pristine pastoral landscapes. These landscapes, in turn, are preserved for the enjoyment of the privileged contemporary consumer subject. Even independent games, so often seen as locations of radical politics and breeding grounds for alternative models of being, run on computers that suck large quantities of energy and that are composed of hazardous and limited resources.

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5 Milburn, “Green Gaming,” 200. Notably, Milburn acknowledges this but asks the reader to consider how games can also provide “hope.”
This project interrogates how popular video games sublimate the desires that the contemporary consumer subject harbors toward environments. Game studies scholars have long characterized games as a uniquely spatial medium, and therefore they extend and remediate conventions of environmental representations such as the landscape. The language of “frontiers” was used to describe the internet in its infancy, and early game studies work suggested that the pleasure of video game exploration is inherently tied to logics of colonization and the exploitation of new, fresh landscapes. This trend is indicative of broader contemporary culture, which invests heavily in fantasies of nature. In *The End of Nature*, Bill McKibben eulogizes “the need for pristine places, place substantially unaltered by man.” This desire motivates a great deal of environmentalist rhetoric, but it also drives a particular type of subjectivity, especially one that aligns with the ideological paradigms of empire and neoliberalism. The mythos that defines America, one of the largest markets for triple-A games, is built upon the pleasures of exploring the unknown, of reaching constantly toward unexplored places, and of a meaningful communion with Nature. As Leo Marx argues in *The Machine in the Garden*, the dual images of the sentimentalized pastoral garden and the savage, treacherous wilderness were concepts that served the American mythos. These images necessarily contradict each other—the garden suggests the land as a place of abundance and possibility, while the wilderness demands violent

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6 See Manovich, *The Language of New Media* and Nitsche, *Video Game Spaces*  
7 Barlow and Kapoor, “Across the Electronic Frontier”; Jenkins and Fuller, “Nintendo and New World Travel Writing.”  
displays of mastery and domination.\textsuperscript{10} Games reinscribe these contradictions in their treatment of environments, spaces, and nonhuman others.

In the following chapters, I will focus mainly on games that evoke this duality of garden/wilderness. For example, I focus a great deal on games in the \textit{Zelda} franchise in part because of the game’s depiction of open, untamed spaces of danger and adventure. This choice of object also arises from the claims of its designer, Shigeru Miyamoto, who described the games’ designs as “miniature gardens.”\textsuperscript{11} My analysis also takes up games that fall into the open world genre, as these games, in their celebration of exploration and “open” spaces, articulate colonialist “frontier” rhetorics and invest in the pleasures of conquering untouched wilderness. Video games respond to the desire engendered by this rhetoric, and so exploration of video game spaces becomes a substitute for pristine places that no longer exist. As John Wills points out, “Games show what we want nature to be, what we want it to become”\textsuperscript{12} The encounters that occur there, between the player and the game, reflect a longing to commune with nature in a meaningful way.

\textsuperscript{10} Ibid, 43.
\textsuperscript{11} Paumgarten, “Master of Play.”
\textsuperscript{12} Wills, “Digital Dinosaurs and Artificial Life,” 406.
This longing is neither inherently violent nor necessarily restorative. It falls under the ambiguous category of the everyday, a structure of feeling that springs from the mundane experiences of the contemporary consumer subject. The environment imagined in the rolling hills of *The Legend of Zelda: Breath of the Wild* (2017) is the same imagined in advertisements for recreational hiking and camping gear. This is a Nature that, as Timothy Morton points out, is
built on the false binary of culture/nature. This binary structures many of the discourses that ecocriticism has sought to deconstruct, such as the rhetoric of human’s separation from and dominion over nature. The violence performed under the auspices of this discourse cannot be overestimated. However, the yearning for a meaningful connection to nature belies the desire to reimagine our relationships to the world around us. This yearning becomes important in the sense that it can be mobilized for transformative action and it has the potential to disrupt and alter orientations. So, while this project traces the ways games can and do reify ideologies that are antithetical to environmental justice, it reserves space for considering the contradictory and ambiguous nature of affective attachments to “greenness.”

This project begins with a common visual and narrative trope that speaks to how, in contemporary culture, we construct our understanding of “nature.” In this trope, the hero reestablishes environmental purity in a poisoned land via individual action. After a climactic battle with an enemy or a dramatic accomplishment is achieved, a cinematic sequence ensues in which murky water runs clear, smoggy skies clear to blue, scorched earth breathes out green grass, wilting flowers bloom, and withered trees grow strong and supple. The camera pans across the various surfaces, witnessing the newly altered textures and reveling in the glory of this reestablished purity. The music swells heroically; surfaces sparkle and gleam; the sun shines more brightly. This trope communicates visually through the spectacle of instantaneous, lush, and bounteous (re)growth. Some examples of this trope include The Legend of Zelda: Twilight Princess (Nintendo, 2006), Ōkami (Capcom, 2006), Harvest Moon: Tree of Tranquility (Marvelous, 2007), Harvest Moon: Animal Parade (Marvelous, 2008), and Kirby 64: The

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13 Ecology without Nature
Crystal Shards (Nintendo, 2000).¹⁴ Shadow of Colossus (Sony, 2005) represents a commonly cited game that overtly reverses this trope.¹⁵ Notably, even games that have been lauded as embodying an ethical environmental consciousness like Flower (Thatgamecompany, 2009) can reproduce visuals of this trope.

¹⁴ In these Harvest Moon titles, the sequences of restoration are less dramatic, but still retain the visual aspect of restorative magic that spreads across the land in waves. Notably, in Harvest Moon titles ecological restoration is tied directly to the economic. Locals need the land to be restored in order to resurrect their town and businesses.

¹⁵ Many have noted that Shadow of Colossus encourages the player to question the heroism of the traditional adventure game. As the player mercilessly hunts down the 9 colossi, their character becomes more haggard and is eventually revealed to have released a great evil in his quest to save his lover. Instead of restoring the land, the player destroys its totem spirits, the mainly harmless colossi. For more, see Lehner (2017), Milburn (2014), and Fortugno (2009).
Figure 3: Screenshots of *Flower*. The sudden and lush restoration of the first-level meadow (Thatgamecompany, 2009; images via YouTube user Full Playthroughs).
This trope relies on the logic of ecological recovery. The pleasure induced by the miraculous blossoming of the landscape stems from the ideal of a pure land untouched by man. By positioning this recovery as the resolution to tales of environmental destruction suggests that it is not only an ideal but in fact the *ultimate goal* of environmentalist action. This line of reasoning also assumes that such a recovery is possible. We live in an era when rising sea levels are driving people out of their homes around the world; climatological shifts are inciting ever-increasing weather-related disasters such as wildfires, droughts, hurricanes, and floods; air levels are regularly exceeding standards of safety and becoming unbreathable; and once-familiar ecosystems are transforming at a rapid pace. In such a time, the idea that we can recover the planet’s former disposition not only fails to recognize the dramatic changes induced by human activity but also actively disavows the reality of these changes, including the disproportionately distributed effects of these changes on the precarious and marginalized. Even the concept of recovery itself is fallacious: returning to a status quo of natural balance is impossible because it is the very nature of our world to be dynamic and ever changing. To treat “nature” as a stable entity to which we can return is to reinforce the logics of Cartesian dualism, which positions human culture as the changing entity against a background of unchanging, stable, and reliable nature.

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16 David Wallace-Wells, *The Uninhabitable Earth: Life After Warming.*
Figure 4: Screenshots of *Twilight Princess*. Before and after the Twilight has been cleansed (Nintendo, 2006; images via YouTube user RandomBlackGamer).

This view of nature also indicates the influence of a politics of purity. In *Against Purity: Living Ethically in Compromised Times*, Alexis Shotwell describes the many-pronged impacts of purity as a conceptual framework. Purity puts the onus on the individual for producing response to environmental destruction, reproducing the logics of possessive individualism that are implicated in that very destruction. Purity drives biopolitical regimes, defining which bodies signify purity and, therefore, which bodies deserve to live. Purity also aligns with systems that mean to forget past violences. It willfully forgets colonialism, placing it in the past, as a regime now thoroughly blotted out, when in fact colonialist projects *continue* to abuse and violate
today. Purity rationalizes, controls, separates, and classifies—it is “a de-collectivizing, de-mobilizing, paradoxical politics of despair.” Shotwell points out that a politics of purity “shuts down precisely the field of possibility that might allow us to take better collective action against the destruction of the world in all its strange, delightful, impure frolic.” Similarly, Anna Tsing argues in favor of contamination as it is suggestive of collaboration and entanglement: “Everyone carries contamination; purity is not an option.” This approach aligns with Donna Haraway’s methodology of “staying with the trouble” and investing in messy entanglements. To be against purity and for contamination is perhaps to engage in projects of response-ability and ecological reimagination. When the trope of ecological recovery draws on purity, it draws on a fraught political imaginary and disempowers transformative change.

While this trope proliferates across visual culture, it takes on special significance in videogames. Here, the player gains the ability to incite environmental change, and the trope becomes the central activity of the game space. The popular PlayStation 2 game Ōkami exemplifies the enacted quality of this trope. In this game, the player avatar is a magical white wolf, the incarnation of the Japanese sun goddess Amaterasu. In the inciting incident of the game’s narrative, a hapless human breaks the seal on a great evil, which rapidly spreads and blights the land. The game’s action takes the form of travelling across the land and purifying it along the way. Using game controls that mimic brushstrokes, the player can enact various elemental alterations called “techniques.” Many of these techniques represent possible methods

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18 Ibid, 9.
20 Haraway, *Staying with the Trouble.*
for enacting ecological recovery. The second technique made accessible to the player, after the ability to restore the sun to the sky, is called “Rejuvenation.” This power allows the player to “restore broken or damaged objects to their original condition.” Shortly thereafter, the player acquires three plant-related techniques, the first of which is “Bloom.” This technique, unlike most others, does not allow the player to attack or to travel more easily. Instead, it allows the player to cause the cherry blossoms on decimated trees to bloom, which results in “praise” flowing from the flowers. The player can use “praise” to increase their character’s stats—after maxing out the stats, the praise turns into yen. So, this is not recovery simply for the purpose of recovery; rather, restoration yields returns to their player and their status. Much of the first few sequences of the game are concerned with making all the cherry trees in the initial village bloom again. This sets the tone for the game, establishing the ethic and aesthetic of restoration.

As the player proceeds, they must restore the local “Guardian Saplings.” When this restoration occurs, it also expels the “cursed zone” that afflicts the surrounding area. By restoring these special trees, the player initiates dramatic cinematic sequences like those described above, in which the local area is purged of evil and restored to its natural purity. After these sequences, demons are expelled from the area and the player’s powers, which are damaged by the curse, are also restored. In a purely instrumentalist sense, the value of the “beauty” of these Guardian Saplings is tied directly to their ability to abolish enemies and streamline the player’s navigation of the space. The player uses this restoration to remove a roadblock and continue their journey. This follows the logics of beautification projects of “urban renewal” and gentrification, which employ the aesthetics of foliage to drive out the inconvenient reminders of the failures of social structures, such as homelessness. Natural or arborescent beauty becomes a means or
methodology for smoothing out spaces to facilitate the passage of certain bodies—the normative white body or the player avatar—at the expense of others.

Figure 5: Screenshots of Ōkami. The Guardian Sapling restoration sequences, in which growths of flowers and flowing waters chase away the darkness and fertilize the fallow earth (Capcom, 2006, images via YouTube user Gay Advent Palace).
For another example of the recovery trope in action, we might turn to The Legend of Zelda franchise. While well-known characters like Link and Zelda are representative of the franchise, many of the games are dedicated to the restoration of Hyrule, the land in which the games take place. The theme of ecological impurity and climatological destruction haunts many entries in the series, such as the flooding of the planet in Wind Waker (2002), the exodus of the Hylians to a heavenly safe-haven in Skyward Sword (2011) and the murky blackness of the Twilight in Twilight Princess (2006). Simultaneously, the pastoral ideal radiates from Zelda’s habitual depictions of rolling green hills, sublime mountain vistas, and bucolic glades.

Majora’s Mask (2002) especially exemplifies the logic of ecological restoration because it emerges from an apocalyptic scenario. A mischievous, clever, but ultimately hapless imp accidentally releases evil that infects the land and disrupts the world’s balance. This incites an impending apocalypse by way of the moon, which will fall and destroy everything in three days. The game’s non-player characters respond in a variety of familiar ways: some pretend nothing is happening and demand the freedom to continue their lives normally; others make plans to flee to where they think they will be safe; still others use their financial means to buy out safehouses.

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21 Some have even claimed that Hyrule is the main character of the franchise. For example, see Schuler, “How Zelda is a story of the land and not its princess.”
22 The Skull Kid of Majora’s Mask plays an inflection of modern industrial society, alongside other Zelda villains like Ganon. Whereas Ganon, often more explicitly calculating, annexes the land and purposely poisons its resources in order to reinforce a hierarchy in which he gains the most power, the Skull Kid plays with powers without full knowledge of its consequences and becomes the puppet of a more insidious force. We may note he is also willfully blind to the results.
23 Here I refer to the stubborn villagers who are determined to continue construction on their carnival; Anju and her mother, who flee to Cremina’s ranch; or the nameless rich young man who buys the Ocean Skulltula house.
The main areas of the game-world are all affected by the evil contamination in ways that mirror climatological devastation and industrial waste. In Woodfall Swamp, the water is poisoned a garish purple, and the player cannot swim in it without losing health. On Snowhead Mountain, the land and its inhabitants are cursed by a never-ending winter. In the Great Bay, the water temperature has warmed to the point at which the humanoid Zoras cannot properly reproduce, and this warm water results in hurricane-like storms and underwater vortexes. The valences of these disrupted ecosystems cannot be lost on anyone familiar with climate change discourse. When the player defeats the boss in each area, the usual cinematic sequences ensues, and the land returns to its normal, lush, and idyllic state; the swamp water runs clear, a verdant spring envelops the mountains, and the oceans calm.
Figure 6: Screenshots of Woodfall Swamp in *Majora’s Mask 3D*. Garish purple waters before the player’s defeat of the temple boss; the swamp’s clear blue water and blue skies after (Nintendo, 2015; images via YouTube user packattack04082).

This and other games that employ the trope of ecological recovery are deeply entangled in an environmentalist ethic and rhetoric. Through their presentation of an aesthetically pleasing restoration and their positioning of the player as a hero capable of inciting this change, these types of games seem to inspire a responsiveness to environmental crises. *Majora’s Mask* overtly centers its action around the environment; responsiveness to the environment is, after all, the
player’s main objective. These titles invest in the player’s desire to have a meaningful connection to nature, to feel themselves empowered to act on its behalf. However, it is often these exact frameworks that reify Cartesian dualism, instrumentalize nature for the gains of neoliberal capital, and train the player in the schema of colonization.

As with most RPG games, *Majora’s Mask* treats the game setting or landscape as a static object, rather than an active and dynamic force. This treatment “relegat[es] environment to background scenery,” which according to Alenda Chang entails producing the environment as the “canvas” or even “greenscreen” on top of which action occurs.\(^\text{24}\) Even though *Majora’s Mask* is centered on a dramatic change between two environmental states, these states only further enforce a static, either/or view of nature (nature is either impure and thus in need of total restoration, or it is pure and ideal). The different ecosystems may only be reverted to their prior “normal” states— they do not further transform as a result of their encounter with disruptive forces. The reversal, as suggested above, both repudiates the reverberating effects of climate change and misrecognizes the inherent changeability of ecosystems. Moreover, the ecosystems of field, swamp, ocean/beach, bay, mountain, and canyon act as formulaic ecological templates that the player-reader can recognize without claiming any ecological specificity. This produces not utopia but atopia, an “anaesthetizing sense that *this could be anywhere or nowhere at all.*”\(^\text{25}\)

Chang suggests this as a retreat from the realities of climate change’s many tentacled phenomena into the simplicity of the non-specific pastoral ideal.

\(^{24}\) Chang, “Games as Environmental Texts,” 58-59.

\(^{25}\) Ibid 59, emphasis original; for more on atopia and games, see Wark, *Gamer Theory.*
The final stage of the game confirms the suspicion that the game has enshrined a particular image of nature— as smooth, pure, and unspecified— as its ideal. During this final stage, the game transports the player to the surface of the moon, that looming symbol of impending destruction. Rather than the expected lunar surface, however, the landscape of the Moon manifests as a verdant field (complete with solar flare) in which white-berobed children frolic. Butterflies, borrowed from the game’s earlier representation of spring in the mountains, drift effortlessly. An enormous tree marks the center, evoking the tree-of-life archetype while simultaneously presenting the only individuating feature on this smooth, grassy landscape. This is indeed a “pristine place,” a perfect meadow that never ends— it only circles back upon itself. Notably, this Moon landscape represents a “before” temporality. The children frolicking represent the game’s deities, the Giants and Majora, in a heavenly landscape. They are “before” a kind of Edenic fall.26 Yet this temporality is inaccessible for most of the game and will disappear by the time of the game’s conclusion. This is indeed a pastoral in Raymond Williams’ sense, as a form always already meditating on the loss of an aestheticized idyllic past.27 The mourning enacted here serves doubly—it attempts to overcome both the loss of this narratively inaccessible temporality and the player’s loss of open and pristine natural spaces in the crowded contemporary world.

26 It is worthwhile also to note that much of Majora’s Mask focuses on the theme of loss and mourning, to the point that most fans generally accept the theory that each phase of gameplay represents one stage of the Kubler-Ross model of grief-processing. While fans have many narrative theories of why the game enacts mourning, this argument suggests that the game’s structure also allows the player to enact their own mourning over the idea of pristine nature and the possibility of wild, unexplored frontiers.
27 Williams, The Country and the City, 13-14.
Figure 7: Screenshot of the moon in *Majora’s Mask*. (Nintendo, 2000; image via Zelda Dungeon).

While *Majora’s Mask* expresses this affectively charged articulation of natural beauty, it also employs an instrumentalized system of exploration and environmental mastery. The game incorporates an interlocking system of environmental antagonism and reward. For example, aspects of the environment make certain areas of the game inaccessible to the player: to reach Snowhead, the player must melt a block of ice; to reach Romani Ranch, the player must destroy a giant boulder; while travelling through the swamp, the player must travel only across lily-pads to avoid the poisonous water. In this way, the environment becomes an antagonist to the player (Abraham and Jayemanne 82-83). Simultaneously, the recovery of environments serves as the player’s reward—once the poisonous water is purified and once the snow melts, the player can explore new areas. These moments of antagonism ultimately track the player’s ever-increasing control over environmental obstacles (through new and shiny gadgets, no less). Thus, the recovery of the ecosystem is instrumentalized much like the Guardian Saplings in *Ōkami*. This
system sets the pace of play and drives the player to interact with the environment as both enemy and reward in ways that nonetheless objectify environmental functions.

Often, games of ecological recovery gesture toward a sense of collaboration through an animism of the spirits of nature. In *Majora’s Mask* specifically, these spirits take the form of four giants who the player saves over the course of the game. In other games, these spirits are harvest sprites (*Harvest Moon*), light spirits (*Twilight Princess*), or deities (*Ōkami*). In some cases, these spirits are humanoid in nature while in others they take the form of animals, but they are always anthropomorphized in some way. Nonetheless, they represent a sense of energy and agency beyond the human. One could argue that, despite the anthropomorphization of these deities and their subjugation to the goals of the player, they suggest an ethics of cross-species kinship and distributed action. For example, without help from the giants, the player in *Majora’s Mask* cannot reach their final battle to stop the apocalypse. That said, the game positions the player as a paternalistic hero, aiding indigenous populations who cannot defend themselves. *Majora’s Mask* celebrates the player who “free[s] the innocent spirit that was inside the mask.” In this way, the games use a language of liberation that takes on a distinctly colonizing tone. By saving these childlike natives, the savior-colonialist is legitimimized in their desire to partake of the land and its fruits. Gamic frontiers are freely given and, simultaneously, earned.

The telos of the game relies on the ideal of nature as pristine and untouched by man, as if this idea of nature is not bound up in social and historical relations. Ecological recovery in the terms of *Majora’s Mask* is a fantasy that can never truly be realized. By instilling this logic in players, the game engenders an impossible desire for a return to pure nature, a fabricated past presented as the destined future. The gamic trope of ecological recovery encourages the player to
attend to the environment as the central concern or goal of gameplay and draws on the affective attachments expressed by romanticized visions of nature. However, this trope ultimately reflects a sentimental environmentalism coded through a nostalgic discourse, a yearning for “greenness” that never was. By allowing the player to enact the recovery of the pristine landscapes in the game space, to process the “loss” of wild, open, and pristine frontiers, these games may in fact discourage radical action in local ecologies. In this sense, the game’s design manipulates the player’s affective attachments to “nature” in order to align it with the structuring logics of mastery and control. But game logic and player affect do not always map so easily onto one another, as the rest of this thesis will demonstrate. Instead, the tension between these two forces results in ambiguous, inconsistent, and uneven drives that define the gamespace. By articulating the contradictory nature of gamic environmental aesthetics, this thesis will show how games, as the defining medium of this historical moment, sublimate the contemporary consumer’s desires toward what they wish “nature” to be.

In the first chapter, I theorize an ethics and aesthetics of open world game design. As one of the buzzwords of contemporary game design, open world provides a central site in which the rhetorics of Western expansionism, globalization, and sentimental environmentalism collide. Open world game design demonstrates how these logics have been distilled over time into a structure that elides its elements under the banner of the ideal of “freedom.” Players may in fact escape the structuring logic of the game by slowing down, getting lost, and wandering. They may indeed assume an alternative comportment toward the game environment. However, this possibility of experiencing the space differently is in tension with game mechanics that demand the rapid consumption of space and a comforting destabilization of the sublime.
The second chapter examines the use of maps in *The Legend of Zelda* franchise to describe how they structure the player's sense of space. While the first chapter introduced the logics that organize game design, this chapter will focus on how these logics are concretely imbued in the player. These maps interpellate the player as colonizer, organizing their consumption of space into manageable chunks. To understand how these subject-effects occur, this chapter methodically interrogates the three types of maps used in the franchise—overworld maps, mini-maps, and dungeon maps—and investigates their concrete functions in particular games. I conclude by demonstrating how *Breath of the Wild*, the latest installation in the franchise, transforms the approaches used by previous games by exalting a technologized, militaristic aesthetic. In this way, the *Zelda* franchise usefully traces the adventure game genre’s various alignments with systems of control.

The third chapter investigates the ways nonhuman animals signify in game spaces and how these animals are instrumentalized by the game structure. This chapter uses the animal as a framework for conceptualizing objects in space and how they contribute to the player’s understanding of environment. To this end, this chapter describes a taxonomy of how animals may function as objects for the player’s use in the game space. I then position the nonhuman avatar as an extension of this overall structure. This exploration of the animal in games reveals the tension between the instrumentalization of animals as functional objects and the paternalistic desires embodied by the aesthetic and affective layers of these animal objects.

Through the work of this thesis, I seek to reveal how videogames enact deep-seated fantasies and desires players hold toward “nature” and environments. By presenting players with pixelated frontiers, games redeploy colonialist fantasies of benevolent exploration without
repercussion. As players take pleasure in the acts of exploration, they mourn the disappearance of an ideal form of nature that never truly existed. The open, green, and magnificent spaces represented in videogames speak to these desires and reify ideologies that are incompatible with the messy, complex, and corrupted realities of climate change and environmental destruction.
CHAPTER I: THE PARADOXICAL ETHICS AND AESTHETICS OF OPEN WORLD

In his work on games and play, Miguel Sicart emphasizes the moral and ethical implications of gamic situations. His work highlights moments in the course of the game during which the structure and semiotic layer meet to initiate reflection. Through these reflections, Sicart claims, the player may learn new things about their own ethical orientations. He sees “playing ethically” as occurring not, for example, when a moral system that judges the players actions from above is imposed (e.g. in Mass Effect or Fallout).\(^{28}\) Rather, he considers “playing ethically” to be an “appropriative, experiential act by which players accept a set of rules and goals and make them their own in an act of creative interpretation” as well as a dialogue that is co-constituted by player and game.\(^{29}\) We might ask, keeping Miguel Sicart in mind, what are the ethical implications of a design model that does not guide the player? Does it open up the possibility space for playing ethically more than a linear game does?\(^{30}\) Soraya Murray writes, “the rule-based worlds of games are landscapes that model value systems and ethical considerations, not only on the level of action within the place, but within the place itself.”\(^ {31}\) If we agree that the place and space of a game is imbued with ethical considerations, what does this mean for open world, one of today’s most popular design concepts and buzzwords?

In the following chapter, I will parse this question through an exploration of the open world as concept, including its history and defining traits. At the heart of its defining traits is a tension between unbounded freedom and strict control. My analysis also finds this tension at the


\(^{29}\) Ibid, 9, 20.

\(^{30}\) Ibid, 15.

heart of the possibility of an ethics of the open world format. As a concept, open world might seem to encourage players to take up a slow and reflective attitude towards environments; however, as a set of design practices, it tends to shut down the possibility of that attitude by directing the player toward aggressively consumptive practices. In order to negotiate the paradoxes inherent in these games, we must first locate ‘open world’ in the games landscape and characterize its functionality.

Open world design has taken over the AAA games market. Many of the most anticipated and well-reviewed games today are open world, from *Grand Theft Auto V* (2013) to *Metal Gear Solid V: Phantom Pain* (2015), *The Legend of Zelda: Breath of the Wild* (2017) to *Red Dead Redemption 2* (2018). Notably, many franchises that were not originally designed as open world have begun to assume this design approach, including the *Metal Gear Solid* and *Legend of Zelda* titles just mentioned. “Open world” signifies a structure of the gameplay, a set of spatial practices, and a framework of affordances for player action. Players in an open world structure can approach game objectives nonlinearly, resulting in a more rhizomatic experience of game world. Instead of completing objectives in a preset order to arrive at new objectives and to finally reach the “end” of the game, the open world player can play as few or as many missions as they want, in any order they want. Perhaps most importantly, open world puts an emphasis on the spatial exploration as a worthwhile and pleasurable activity, an end in itself, alongside the more typical goal-centered directives.

Open world games have a disputed history, in part due to their breadth of definitions. As Stuart Brown asks in his attempt to delineate a past for this concept, “How open does a world have to be before it’s open?” For example, are all *Zelda* games open world, since they all
incorporate the player-directed exploration of the combination of dungeon and overworld that defined the original title? Or does open world require a specific level of player “freedom” to be considered open? Is open world a genre, or a design choice? If it is a design choice, how much does this choice limit or enable the kinds of worlds it depicts and the kinds of stories it tells? For the purposes of this project, I will consider open world as a set of continuously evolving conceits that generally involve nonlinear gameplay, a focus on the exploration of space, and a wide breadth of in-game actions/content. In general, games historians agree that open world as a design approach was burgeoning in the 1980s but that it gained a significant boost in popularity thanks to the arrival of Grand Theft Auto III (2001). The development of the format we know today, though, is somewhat more complicated.

Brown outlines for us three central lineages for today’s conception of open world: the driving game, the outer space exploration game (what he calls “space sims”), and the adventure role-playing game (RPG). Each of these game genres is more or less defined by the type of space (the open road, the blackness of outer space, or more traditionally “natural” environments) and the method of travel (car, spaceship, and foot). Importantly, Brown notes not only which kinds of games that contributed to the development of open world game design but also why these types of games were especially suited to the open world format. For example, racing/car games were well suited to open world because vehicles allow the player to travel across large spaces quickly. Meanwhile, he pins the space exploration game’s fit to “the expansive nature of space,” and the adventure RPG’s to the complementary nature of adventuring and exploring.

32 This project takes for granted that game worlds are necessarily imbued with/constructed from narratives, whether the design engages actively in “environmental storytelling” or not.
What Brown does not point out—and what is particularly important to my argument here—are the specific rhetorics that accompany each of these types. Outer space exploration is inherently tied to its conceptualization as the “final frontier” of unclaimed territory for the United States and the U.S.S.R. as they sought global dominance via a stake in space’s conquest. The excitement of racing takes the form of a command of time and space, and the adventure genre has its roots in the colonial, expansionist imaginary. Ultimately, all three of these genres depend on logics of control and ownership that are entrenched in the Western imaginary.

There are many reasons why open world has been hailed as the “holy grail” of gameplay development. For example, rejection of linear design pleases gamers who conceptualize the game by way of their individual mastery. What these ‘hardcore’ gamers consider to be the infantile ‘hand-holding’ of more linear games is replaced by puzzles with no single answer, spaces with no single path, and gameplay situations that invite creative and masterful manipulations. Open world design also guarantees longer play time (some go as far as 100 hours before content begins to be exhausted) and is optimized for the addition of downloadable content. By keeping players hooked on a specific game, companies can more easily convince these players to spend extra on downloadable content. In turn, this content requires significantly less resources to make than an entirely new game, leading to greater profit. In these ways, open

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33 Saxton Brown, “The Garden in the Machine,” 397; notably, Saxton Brown also suggests that the survival mechanics that are also popular in open world games can be traced back to Oregon Trail (1979), p. 395.
34 Braben, “Towards games with a wow factor.”
35 van Nuenen, “How Zelda Keeps Us Young.”; For example, we might turn to the structure of the “shrines,” mini dungeon comprised of one or several puzzles around a central mechanic. Players, using detailed physics and chemistry system of the game, continuously develop new, alternative solutions to the puzzles.
world design feeds into both the profit-oriented models of AAA game production and the rhetorics of contemporary gamer culture.

With that said, open world as a concept has broader appeal because it evokes a sense of openness, unboundedness, even freedom. However, through its attempts to produce a sense of “freedom,” open worlds always mimic freedom within a limited system, feigning what Robert Yang calls a “simulationist fantasy” (99). Though this is a necessity of the medium—according to some, a game would in fact cease to be a game if it lacked a system of rules to delimit it—the concept of open world tries to occlude its own limits. The very name “open world” evokes a sense of unboundedness, beckoning the player to imagine a world without limits. Much of the excitement that intensified around Breath of the Wild before its release zeroed in on its map size, though in fact its actual measurements have not been confirmed. Yet even in this, the largest open world game to date, the player can travel to the edge of the map and look out across an arbitrary boundary, a cliff face they inexplicably cannot climb down (even though they can climb just about any other surface in the game). The player stands at the edge of a cliff, beyond which a hazy horizon looms, a horizon they cannot ever explore. Modding communities toy with these arbitrary boundaries in ways that explicitly demonstrate the limits of the game software and the ways the diegetic landscape hides those limits. For example, in a recent YouTube video, the modder uses an exploit to find the true “edge of the world,” where the

Even games that are built around a procedural generation of space, in which this continuation is theoretically infinite, suffer from constraints in terms of rendering.

Different sources have reported a variety of sizes, but there has never been an official confirmation of the size of the map from the designers. We may note, though, that the design was based on the city of Kyoto, Japan. See Webster, “A chat with the directors of The Legend of Zelda: Breath of the Wild.”
player-avatar glitches through the ocean and falls into oblivion.\textsuperscript{38} Many of open world’s defining elements can be traced back to this desire to evoke unboundedness. We might consider, for example, its pretention of an imagined whole, its presentation of smooth (rather than striated) space, and its accumulation of mimetic detail,

![Figure 8: Screenshot of Metty33’s video. The avatar glitches through “the edge of the world” (Metty33, 2018).](image)

Open world carries with it the burden of realism; contemporary games in the open world genre tend toward ever greater accumulations of detail in order to present a fully realized world. The detail of that which is deemed ‘natural’ is given special attention. This approach uses nature as a sign of “authenticity,” as “[d]esigners recreate flora and fauna in digital guise to grant legitimacy and coherence to their artificial worlds.”\textsuperscript{39} Hence detail as varied as slippery rock faces in \textit{Breath of the Wild} and temperature-responsive horse genitalia in \textit{Red Dead Redemption 2}.\textsuperscript{40} The designers of the latest open world games have focused especially on their physics

\textsuperscript{38} Metty33, “NEW GLITCH!”

\textsuperscript{39} Wills, “Digital Dinosaurs and Artificial Life,” 400.

\textsuperscript{40} In the weeks before \textit{Red Dead Redemption 2}’s release, games journalists latched onto the fact that the designers programmed the genitalia of the horses to be responsive temperature changes, for example shrinking in the cold. One article on this topic is titled “Red Dead Redemption 2 Horses Have Impressive Detail,” highlighting how open world is defined by its attention to
engines. These are the systems through which the game mimics the laws of physics, such as in simulations of gravity. *Breath of the Wild*’s physics and chemistry engines are some of the most advanced at the time of this writing. Because of the detail put into these systems, they allow players to solve puzzles through creative manipulation, rather than the mimicking of the game designer’s logic. This of course continues the rhetoric of individual mastery imbued in contemporary gamer culture.

The concept of open world puts an emphasis on completeness and accuracy, though in fact a game cannot truly achieve either. An utterly “open” world would be that which mimics not only the phenomenological experience of our world, but also the experience of our world as imagined through globalization, a world in which the unmarked, anonymous body is free to travel and explore all spaces within that world. Of course, this kind of world does not exist and cannot be experienced in our “real” lives, let alone in the technologically constrained game space. Drawing on McKenzie Wark’s *Gamer Theory*, Saxton Brown points out, “the game space of these misleadingly labeled ‘open worlds’ is not the ‘nowhere’ of utopia, but the atopia or ‘everywhere’ of topology: every space, even that of natural environments, is included within the system.” This conglomeration of “everywhere” emerges in the breadth of environments included in *Breath of the Wild*’s Hyrule, with biomes as diverse as tundra, rainforest, desert, and

“detail.” Notably, this article came out a full year before the game’s release. Even though this was already an established fact about the game, buzz about it resurfaced and spread wildly in the weeks before the game’s release.

*Breath of the Wild*’s development team innovated what they call their “chemistry engine.” In a GDC session, they compared this to the physics engine: “One way of describing a physics engine is ‘a rule-based movement calculator.’ In comparison, we decided the chemistry engine would be ‘a rule-based state calculator.’” This engine determines the interactions such as setting something on fire, putting out a fire with water, conducting electricity, or melting ice.

grassland (to mention only a few). As fans have noted, in an area that has been estimated around the size of Manhattan, this wide variety of climates becomes absurd.\textsuperscript{43}

Open world masks its own inaccuracies in its plethora of detail. This masking materializes through reactive AI that responds to the player, suggesting a dynamic system of interactive, autonomous objects. Robert Yang highlights “the extent of [open world games’] emergent world and agent simulation” as “their central selling point,” claiming that the believability of the game world relies heavily on “agents (wildlife, civilians, disparate factions) who interact within a supposedly vast, dynamic AI ecosystem.”\textsuperscript{44} These games rely on preset systems of interacting variables that, in their complexity, attempt to evoke the complexity of earthly ecosystems and their varied agents. However, this recreation is often aimed toward creating a \textit{feeling} of complexity, rather than its actuality. As Hans-Joachim Backe points out in his critique of \textit{Red Dead Redemption} (2010), “the game’s depiction of nature is guided by verisimilitude rather than an attempt at true simulation: weather changes are random, animals spawn instead of reproduce, and wildlife will never become extinct.”\textsuperscript{45} This verisimilitude, this \textit{feeling} of complexity, inherently fails to recreate the variety of forces that direct the functioning of meatspace ecosystems.\textsuperscript{46} For example, gamic weather patterns, though growing more complex with each new title, fail to capture the complex forces that cause meteorological phenomena.

\textsuperscript{43} Sperwink, “It’s not very reasonable.”
\textsuperscript{44} Yang, “On ‘FeministWhorePurna’ and Ludo-Material Politics,” 99
\textsuperscript{45} Backe, “Within the Mainstream,” 55
\textsuperscript{46} If we seriously follow recent work in ecocriticism that attempts to deconstruct the nature/culture binary, we can never fully rule out a game world that could in fact capture these complex ecological forces. However, since present day open world games focus instead on a smooth verisimilitude that is simplified in order to protect the agency of the player, these games are set to fail at capturing ecological complexity from the start.
Abraham and Jayemanne note that many open world games employ “a ‘skybox,’ which gives the impression of meteorological phenomena but actually sits on top of the game world like a cloche.”⁴⁷ Though *Breath of the Wild* mimics weather simulation closely—its system accounts for wind speed, wind direction, and pressure systems—this system is still procedurally generated and does not account for temporal relations between these phenomena.⁴⁸ Even though high levels of rainfall may result in standing water on the landscape, this water is quickly absorbed into the earth shortly thereafter. Ultimately, these systems cannot account for the long-term, distributed effects of climatological phenomena.

That said, we may question the usefulness of exact representation or reproduction for the suggestion of an environmental politics. The goal of ecomimesis echoes the continuous push for ever greater photorealistic detail in the rendering of landscapes. In this way, games mime the “objectivity” of the camera lens by recreating its aesthetic effects.⁴⁹ This drive for “realism” is fraught with the rhetorical baggage of implying the reality of other aspects of gameplay, including the portrayals of violence in military games, for example.⁵⁰ Similarly, ecomimesis in game rendering suffers from an obsessive desire to recreate our coded “image” of nature. Some scholars suggest that the necessarily algorithmic systems represent instead an opportunity to reimagine our ideas about “nature” and “ecologies.” For example, Amanda Phillips suggests that *Minecraft*’s substitution of “spawning for reproduction, versioning for evolution, and drop probabilities for history… defer[s] neat categorization.” Instead, she suggests that this

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⁴⁷ Abraham and Jayemanne, “Where Are All the Climate Change Games?” 50.
⁴⁸ McClusky, Kevin, “Explore the Technology that Brought Breath of the Wild to Life.”
“algorithmic ecology” queers both the temporality of gameplay and our ideas of ecology.\textsuperscript{51} Saxton Brown argues that the “processes at the core of their simulation of nature might make games among the most powerful contemporary ways of reflecting upon environmental crisis.”\textsuperscript{52} Even if these game systems cannot fully mirror the realities of ecosystems, they can offer a sense of the dynamism of nature and the entanglement of our activities with the workings of broader ecologies. A rejection of ecomimesis opens up the ability of gamic processes to help us revise our understanding of “nature.”

To move away from representations of ecological accuracy, it may be more useful to consider how open world structures the player’s experience of space. Open world takes advantage of the medium’s inherent investment in space as a central aspect of gameplay. A hallmark of open world is to elide the chunking of space: game levels tend to be obscured or disappear entirely, along with the accompanying loading screen. This reduces the sense of the “disruption” of space, making the game world feel continuous and unified.\textsuperscript{53} A game accomplishes this sense of unity through framing that elides limitations of the game’s structure. Yang usefully outlines the design practices that go into the actual development of seemingly continuous space:

Game developers generally do not engineer, simulate, or author open worlds as continuous worlds. Instead, developers often separate the world into many regions, sectors, or lumps: smaller chunks of a larger world, which are then streamed into the game engine as the player crosses a secret boundary. When the player leaves a given neighborhood, that data is cleared from memory. As an optimization, inhabitants from past regions will often ‘sleep’ or even vaporize entirely when the player is not present or

\textsuperscript{51} Phillips, “(Queer) Algorithmic Ecology,” 106.  
\textsuperscript{52} Saxton Brown, “The Garden in the Machine,” 387.  
\textsuperscript{53} van Nuenen, “How Zelda Keeps Us Young.”
not looking[...] Most open world engines operate as ‘sandboxes’ that retain little or no memory of what happens within their environs.54

Thus, as the player in Breath of the Wild crosses from the Great Plateau to the misty regions beyond, or from Central Hyrule to the Gerudo Desert, the screen registers this movement visually via a small loading circle at the bottom of the screen. Enemies activate in the software and become visible only when the player arrives in closer proximity. The environment is optimized to enact its aliveness and dynamicness only in relation to the player’s footfall. In the game world, a tree cannot possibly fall if no one is there to hear it.

This performance of environmental dynamism bolsters the sensation of being in the game world. Open world games attempt to enhance this feeling of being in an “open” world by offering the player a plethora of actions and content. In Grand Theft Auto VI, the player can not only steal cars and cause mayhem but also go to the movies, shop at a satirical version of Urban Outfitters, and play tennis. In this way, the game replicates the mundane everyday practices of the consumer subject, effectively collapsing the border between inside and outside the game.55 The incorporation of these actionable details evokes a sense of “the everyday.” For example, in Red Dead Redemption 2, the player can get a haircut, take a bath, get drunk, gain/lose weight, flip through shopping catalogues, and play poker. However, these games also often suggest freedom in the sense that the player can partake in actions they might not commit outside of the play space. Consider the infamous ability to solicit a sex worker and to then immediately murder

54 Yang, “On ‘FeministWhorePurna’ and Ludo-Material Politics,” 99; Phillips also gestures to proximity-reliant structure in her analysis of Minecraft, but she suggests that its ambient system offers an alternative way of viewing the gamic environment.
55 It is worthwhile to note that these activities gesture to a certain kind of subjectivity, especially that of the young, white, cis heterosexual male.
her to reclaim money in the *Grand Theft Auto* franchise. Few would disagree that this represents morally reprehensible behavior; yet in the utilitarian and extractive logics of this game, this action becomes conceivable as useful and therefore normalized behavior.

Returning to Sicart’s framework, this scenario may in fact represent how the game design encourages the player to respond in terms of moral thinking, as opposed to “instrumental” and “ludic strategic thinking.”\(^{56}\) For Sicart, moral gameplay centrally arises from a sense of transformative reflection. Moments of “ethical cognitive friction” can incite these moments because they jolt the player out of the mode of instrumentalization. Ethical cognitive friction “comes from the conflict between the actions that is required by the game and the social fiction that is created [. It] introduces tension between the procedural and the semiotic levels and potentially generates moral reflection. Ethical cognitive friction is a pause in instrumentality that allows creative play to take over.”\(^{57}\) For some, the moment of murdering the sex worker, especially for what is usually a pretty paltry sum, could cause this dissonance. This is not dissimilar to the concept of ludo-narrative dissonance, which Joachim-Backe highlights as a central site for creating environmental consciousness in popular games. In this framework, a tension emerges between the instrumentalization encouraged by gameplay and the player’s affective experience.

This instrumentalization of course has an effect on how players interact with resources and environments. The common structures of most video games encourage players to consider the environment as an endless resource put in the services of the player’s goals. This positioning

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56 Sicart “Wicked games” 104; Sicart “Moral dilemmas in computer games,” 31.
57 Sicart, *Beyond Choices*, 95, 134.
of the environment as standing reserve redeploy Western logics of man’s fundamental dominion over nature. Though advertisements framed *Breath of the Wild* as having a highly detailed environmental system, on which the player could have direct and complex impacts, the game nonetheless follows the same approach. Players of *Breath of the Wild* have suggested that the game’s structures compel them to exploit the environment’s resources in ways they couldn’t ethically accept in a real world setting.\(^{58}\) For example, players have the freedom to set fields ablaze and wildly deforest without significant consequences, as the plant life flourishes again as soon as the player leaves the immediate area (the destruction is “cleared from memory”).\(^{59}\) In this structure, ecological flourishing simultaneously resists the power of human agency—it can always recover – and functions as a backdrop for the players desires.

In the myriad ways discussed above, open world is a practice that simulates a large, dynamic, continuous, and detailed fantasy of space. It elides its own realities to develop particular reactions in the player, seeking to elicit awe or a feeling of embodiment in a ‘realistic’ world. However, I would argue that an ethics of open world might also offer a more reflective practice. The gamic experience always produces a tension between emergent gameplay practices and the structuring logic of the game’s system. Much of this project’s argument relies on the idea that games train the player’s sensoria in order to interpellate them as subjects of neoliberal capitalism.\(^{60}\) With that said, I also offer a qualifier: just as the player is subject to the positioning of the game, the arena of play always offers wiggle room for the player to push against or

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\(^{58}\) djimmtgamechangerdoc. “Of Meats and Men: Environmentalism in Breath of the Wild.”


\(^{60}\) Dyer-Witheford and De Peuter, *Games of Empire*, xxix-xxx.
reorient their relationship with the game system. The next section of this argument will consider how open worlds may offer space of possibility for this tactical reorientation.

For some players, open world represents an answer to the ideological implications of the linear game. This design model offers a world in which constraints, forced on the player by tyrannical outer agents, seem to dissolve. In this sense, open world rejects the closure that is usually constructed through narrative. It instead relies on nested scales of narrativity, which may or may not consist of closed loops. In *Breath of the Wild*, the player closes the game’s largest narrative loop by approaching Hyrule Castle and defeating the evil incarnation of Ganon. The in-game missions that organize gameplay by way of minor tasks, many of which relate in no way to the central plot, compose the smallest loops. These loops respond to a transhistorical desire for closure, as suggested by Peter Brooks in *Reading for the Plot* (1984).\(^\text{61}\) The closure of narrative provides a way of gaining mastery over death and authority over one’s own experience of life; Brooks links this attempt at mastery, via psychoanalysis, to a masculine desire for completion. Missions and tasks that provide this sense of closure proliferate in open worlds, populating the landscape with icons and guiding the player by way of instrumentalizing their exploration.

That said, open world games also lean more toward unstructured play than other design models. Players can, and often do, choose to ignore missions or narrative arcs entirely. In my own gameplay, I have chosen to not close the largest narrative loop of *Breath of the Wild* by avoiding Hyrule Castle entirely. The option to experience the game in this way suggests that open world design can invest greater value in both unstructured play and the space of the game itself. This decision to leave open the largest loop may suggest an ethics of inaction, a denial of

\(^{61}\) Brooks, *Reading for the Plot*. 
response-ability. However, I pose this practice here as an alternative to traditional models of gameplay because it rejects the ideology of progress and sits more comfortably with the politics of messy entanglements offered by theorists like Haraway, Tsing, and Shotwell.

However, if the player does complete the main narrative loop, the game nonetheless then deposits them in a time and place before that closure. Brooks suggests that “it is the role of fictional plots to impose an end which yet suggests a new beginning: a rereading. Any narrative, that is, wants at its end to refer us back to its middle, to the web of the text: to recapture us in its doomed energies.”62 In this sense, open world game design echoes this effort of recapture. For Brooks, the energy that drives the desire for closure is also a desire for the “right” ending; the reader experiences constant anxiety over possibility of the narrative “short-circuiting” into a wrong ending.63 The game suggests that closing the largest loop in the game before closing the smaller loops is a kind of wrong ending. By depositing the player back in the game space, the open world encourages the player to return not only to exploration but also to the effort of closing the smaller loops, the effort of utter and total completion. If we agree that open world offers loops of narrativity only to demand their closure, what does this mean for the player who fails to attend to them? These players may in fact assume an alternative disposition toward the game space, which some have referred to as “dwelling.”

Dwelling here is conceived as a particular way of being present to a place that suggests a reimagining of the relationship between the subject and object, or, alternatively, the human body and the environment that surrounds it. Open world orients the player toward the game space as

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the central site of meaning making and, in this way, heightens the player’s embodied perception of that space. The term dwelling often enters scholarly discourse through Heidegger’s philosophical concept of *dasein*, which entails a sense of presence as well as concern for and with the space in which one exists.64 Heidegger positions *dasein* as necessarily against a delimited Cartesian understanding of space—instead, dwelling suggests the context-specific and necessarily entangled experience of the world. Sara Ahmed takes this concept and employs it to understand our orientation in space and how that relates to time. She writes, “to dwell on something is to linger, or even to delay or postpone. If orientation is a matter of how we reside or how we clear space that is familiar, then orientations also tame time and require giving up time.”65 In this sense, dwelling becomes both temporal and spatial.

Anna Tsing’s “art of noticing” and her mushroom-picking walks represent a form of dwelling consciously and attentively in a space.66 Tsing’s approach highlights a sense of slowness, of turning away, at least briefly, from the rapidity of contemporary capitalism. The ethical thrust of this temporality originates in the relationship between ecocriticism and the progress narrative. As Anna Tsing points out, the language of industrial modernization relies on the concept of progress, of a constant forward motion through time. For Tsing, the current ecological crisis gives the lie to the fallacy of progress and shows the weakness of its logics. She writes, “Progress is a forward march, drawing other kinds of time into its rhythms. Without that driving beat, we might notice other temporal patterns.”67 In aimless wandering, the player may

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64 Heidegger, *Being and Time*.
explore alternative rhythms, sliding into eddies of time. Tsing’s turn to mushroom picking illustrates alternative ways of being in response to climatological destruction, as allowing for entanglements. Mushroom picking suggests an attunement to and with the ecosystem around oneself.

This rhetoric of dwelling aligns closely with the discourses that highlight “slow” or “boring” gameplay design as site of relaying or cultivating environmental consciousness. Many theorists have emphasized games that force a player to pause, to alter their orientation toward the game, to conceptualize the objects within the game as present-at-hand rather than ready-to-hand. P. Saxton Brown suggests the concept of “simulated boredom” as a site for developing environmental consciousness in games. For Saxton Brown, “boring games” maintain a “cessation of goal-directed” behavior and through “the abstention from the instrumentalization of nature, [offer] room for contemplation on time, space, and nonhuman/human relations.” Some commonly cited examples of this include *Proteus* (2013) and *Mountain* (2014), though the general category of the “walking simulator” might also fall under the term “boring games.” An important factor in what defines these types of games is the player’s limited agency. In *Proteus*, for example, the player explores an island from a first-person perspective; however, the controls only allow the player to move around, and the player has no other way of directly interacting with the area around them. They can follow the skittish, chicken-like birds around, but they cannot catch them. The term “walking simulator” has been used to jeeringly belittle these types of games.

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68 When an object is ready-at-hand, for example, we become unaware of it in our focus on what we can do with it, what it allows us to do. This aligns with an instrumentalist approach. An object becomes present-at-hand, for example, when it breaks. We then begin to notice it and its qualities (for example, its brokenness); Vella “The Wanderer in the Wilderness,” 12.
of games, but in fact, walking itself is an action with a strong cultural history. We might turn, for example, to de Certeau’s consideration of walking as an act of language that defies the delimiting strategies of power structures. The very act of walking in games, as Bernadette Flynn has pointed out, results in a more developed sense of and relation to the game space. For Flynn, this means that games that put an emphasis on travel and exploration orient the player toward an ethical consideration of space more so than games that favor action and violence. Walking in open worlds enacts a rejection of the types of travel preferred by the design— it rejects the rapid consumption of space offered by fast travel methods such as cars, horses, or warping.

Meanwhile, Miguel Sicart has noted the possibilities for ethical gameplay provided by the concept of “slow technologies,” which “aspire to become pauses” and which might “give us time” instead of focusing, like most technology, on “wast[ing] less time.” By reimagining our conceptions of time, these slow technologies respond to the pressures of what Jonathan Crary has called 24/7 capitalism. Sicart, Beyond Choices. Soraya Murray draws on the connection between “velocity and mastery [as it] describes a historical precedent of the imperial drive toward expansion, embodied in the domestication of the frontier and the colonial impulse.” Instead of feeding into a rhetoric in which time is figured as a resource to maximize for the utmost production and consumption, this slowness proceeds via its inherent uselessness, incapable of being mobilized. In this sense, slowness becomes a site for the player to reorient themselves toward the game world. While this concept of reorientation toward the game environment is a rich conceptual tool, its use has

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70 Quoted in Murray, On Video Games, 163; however, the tropes of action-oriented games are often included in exploration-style games.
71 Sicart, Beyond Choices, 72.
72 Crary, 24/7: Late Capitalism and The Ends of Sleep.
73 Murray, On Video Games, 163.
produced a tendency toward “walking simulators” and indie games more generally as the most environmentally conscious types of games.\textsuperscript{74} To push back on this bias, I locate open world games as a site in popular gaming that may offer similar ethical opportunities.

This theory of “slow” or “boring games may be more clearly understood through the language of queer temporalities. In his reading of \textit{Life is Strange}, Matt Knutson positions the queer temporalities of the “backtrack, pause, rewind, rest” against the chrononormativity of competitive and speed-oriented professional gaming. He writes, “Such play drops the pretense of high-stakes urgency; it unwinds the strict sequentialism... it carefully considers decisions and their consequences.”\textsuperscript{75} This is a type of gameplay that cannot be fed into the profitable systems of professional gaming in part because it is unwatchable— the slow, mulling, deliberative gameplay is both “boring” and cannot be seen as linear or progressive in any clear sense. The kind of wandering suggested by walking simulators, though they lack the built-in time-manipulating mechanics of \textit{Life is Strange}, may also be “unwatchable.” It is unlikely, for example, that someone would enjoy watching me get lost in \textit{Breath of the Wild}, doubling back, going in circles, failing to follow any clear or coherent goals.

Bonnie Ruberg, in their suggestion of the queer potential of play that is “no fun,” offers the category of “boring games.” These games “alienate players by failing (or refusing) to engage them in a way that feels rewarding.” The broader category of the no-fun suggests that “video-game interactivity seems to offer players agency, while simultaneously dictating and strictly limiting the extent of player choice. Embracing the no-fun enacts a different type of agency...

\textsuperscript{74} Vella, “The Wanderer in the Wilderness”; Rivera-Dundas, “Ecocritical Engagement in a Pixelated World.”
\textsuperscript{75} Knutson, “Backtrack, Pause, Rewind, Reset.”
These are not generic experiences, not default choices.”⁷⁶ Boring play describes player practices that push against the grain of the game’s structuring logics. In this way, the player who wanders in the open world, who willfully gets lost or even drifts into daydream experiences the game world at a remove from the instrumentality of missions, extraction, or strategic exploration.

Christopher Goetz suggests that “Ambient games that forego countdown timers… issue an invitation to pause, to drift, to daydream, to dwell.”⁷⁷ He offers the adventure side-scroller as an example because the unreachable background space implants a nostalgic longing in the player for a spatiotemporal experience that cannot be, causing them to turn away from the imperatives and action of play. We may recall the player standing at the artificial edge of Hyrule, staring across the gorge. The player may look out the window, drift off from the game itself, or space out into the unreachable background environment. This may also queer time through “the pause (time out of time)” and “the duality (“home and abroad, past and present, dream and everyday life)”⁷⁸ Goetz also suggests that wandering in games loses time that cannot be fed into the economy of “playbour.” Jumping off Kracauer’s idea of “radical boredom,” he writes about time spent “wandering aimlessly” and “hardly doing anything at all” as he played Nintendo 64 games that he had already completed, experiencing “moments of time slid across the floor that will never return.” The player’s very experience of boredom as they play may also suggest the affect of Scott Richmond’s “vulgar boredom,” a state in which the subject “is neither overorganized, subjected to productivity or uplift or pedagogy, nor intensive.”⁷⁹ This boredom is a “retreat from

⁷⁶ Ruberg, “No Fun,” 117-118.
⁷⁷ Goetz, ““The Fantasy that Never Takes Place”” 65.
⁷⁸ Ibid, 70.
desire,” including the desire for conquest that hides in the longing to “meaningfully” commune with nature. In this ambivalent mode, the player perhaps escapes the overhead training of their sensorium into a system of mastery and control; however, they may also fail to reach any kind of ecocritical consciousness of response-ability. Instead, they mull, meander, stew. This is the player experiencing a “copresence” alongside the “trivial, nonproductive wanderings of automated digital inhabitants.”

Open world games take up features of walking simulators, and an ethics of open world design might suggest how games can reorient players and cultivate a conscious attentiveness toward space and environment. Players often enact this reorientation in open world games even though open world games are not structured with an overhead rhetorical push toward this mode. Just as Sicart’s framework suggests, this is an ethical orientation that is thus co-constituted by player and gameworld. Julie Muncie’s article on her reexamination of the open world genre suggests how open world design structures the player’s relationship to the game’s space. Considering how she has been able to return to open world games repeatedly over long stints of time, she writes:

I feel like this might be the way well crafted open worlds are supposed to be experienced—not as gluttonous binges or narrowly focused rampages, but as long-term occupancies. I've found that these games exist more vividly in my mind as I embrace this style of gameplay. They grow in my imagination as they occupy more and more space in my memory. Instead of rushing through them or viewing them as content generators, I abide in them.

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81 Muncy, “Open World Games Are Changing the Way We Play Videogames,” emphasis mine.
The language of “occupancy” and “abiding” recalls the sense of “dwelling.” Muncie suggests a relationship between the player and the game that allows a kind of self-conscious and attentive presence within the game space. Moreover, she emphasizes how this occurs over the course of extended lengths of time. This is not a rapid, consumptive practice, but rather a way of coexisting with the game space. That said, if we agree to the claim that the player’s practices in the game space have an influence on their practices beyond it, then the capacity of open world to imbue sense of dwelling— and a desire to dwell— has an impact on how the player reimagines their relationship to the world around them.

Though this aimless dwelling mode is possible in open world spaces, however, design structures can and often do willfully impede this possibility. As Soraya Murray point out, “Even the most ‘open’ of these generated landscapes are designed with play in mind, skewed in order to design a curated gameplay experience.” For example, the high-intensity velocity of Grand Theft Auto games does not lend itself well to slow wandering. McKenzie Wark describes how a player can “trifle” with Grand Theft Auto: Vice City (2002) by stealing a car to “simply tool around in it.” Yet, even when the player “tune[s the] radio to [their] favorite station and feel[s] the sensuous shapes and forms of the city vector by,” this aesthetic experience is based on the rapid consumption of the landscape. The histories of the open world, their enmeshment in the colonial rhetorics of exploration and the fast consumption of space, aim the player away from slowness. The proliferation of missions, those small loops of closure, blocks out spaces and time, structuring player movement. The player’s exploration of the space is directed through concrete

82 Murray, On Video Games, 153.  
83 Wark, Gamer Theory, 113
structures such as map interfaces, which reinforce instrumentalization through bright icons that highlight missions. Following these goals, the player may instrumentalize their travel through space. They may plan their itinerary based on where they can find ores or other crafting substances. Perhaps the best example of this organization of player exploration materializes through open world’s obsession with the sublime.

We’ve established that open world design creates intensely-detailed, immersive, and grandiose game environments. As Jane McGonigal points out, “There’s a reason why gamers love epic games. It’s not just that bigger is better. It’s that bigger is more awe-inspiring.”

McGonigal draws on a concept she calls the “epic environment,” which she defines as “a space that, by virtue of its extreme scale, provokes a profound sense of awe and wonder.” As examples, she lists off several of the seven natural wonders of the world: “Mount Everest, the Grand Canyon, Victoria Falls, the Great Barrier Reef.” She writes, “These spaces humble us; they remind us of the power and grandeur of nature, and make us feel small by comparison.” I read McGonigal’s description of this structure of feeling as a gesture to the concept of the sublime. Yet, when it comes to games, McGonigal marks a difference: “A built epic environment is… not a work of nature, but rather a feat of design and engineer. It’s a human accomplishment. And that makes it both humbling and empowering at the same time.” For McGonigal’s purposes, this sense of awe produced by the built environments energizes the player in ways that can be mobilized for social good. However, the trend in open world design is to present the player

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85 Ibid, 104.
86 Ibid, 104.
87 Ibid, 104.
with a moment of the sublime only to spend the rest of the game deconstructing that sublimeness.

The opening sequence of *Breath of the Wild* ends with the player stepping out to the edge of a cliff to overlook a breathtaking vista (see Figure 16).\(^{88}\) In this moment, as the ‘camera’ zooms out and tracks up, highlighting the smallness of the player-avatar, the game poses the player so that they will marvel at the landscape’s enormity and complex detail. Many have also noted the similarity of this image to the painting, *Wanderer above the Sea Fog*, which is often evoked when discussing representations of the sublime (see Figure 17). In this moment, the game revels in the panoptic, an pleasure derived from the “transform[ation of] the bewitching world by which one was ‘possessed’ into a text that lies before one’s eyes.”\(^{89}\) Though moments ago the player is wandering amidst the trees, encompassed by the space around them, this moment of scopic pleasure pushes the landscape away, transforming it into something to consume rather than something in which to be enmeshed. This example embodies a longer history of designers using “grand wilderness displays” to tout ever-increasing processing power. As “videogame worlds came to resemble the canvases of Romantic era painters” the “electro-Romanticism” of these designers cast the player as “a mere onlooker, a small, insignificant, and solitary figure.”\(^{90}\)

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\(^{88}\) We may also note that a similar image is used for the game’s cover art. For example, see Figure 1.
\(^{89}\) de Certeau, *The Practice of Everyday Life*, 92.
\(^{90}\) Wills, “Digital Dinosaurs and Artificial Life,” 40.
The sublime as it is conceived of today—as an encounter with unfathomable greatness—emerged from the writings of Edmund Burke and Immanuel Kant. In 1756, Burke writes about sublimity as a concept directly opposite to beauty in that it evokes awe, horror, and even fear. He thus describes “delight” as a kind of pleasure derived from the conquering of this negative experience.\(^9^1\) Similarly, Kant conceives of the successful encounter with the sublime as an example of reason overcoming the senses. As the senses are overwhelmed by greatness, the detached and intellectual human rationality ultimately conceives this greatness and therefore subsumes it under the power of human reason.\(^9^2\) In this way, Kant’s understanding of the sublime is deeply invested in the Cartesian mind/body divide. Ultimately, in the experience of the sublime, one is unmanned and disempowered in the face of great magnitude. What gives one pleasure is the recovery from that disempowerment, the recovery of control and mastery.

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\(^9^1\) Burke, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful.*

\(^9^2\) Kant, *Critique of Judgement.*
The structure of the opening sequence of *Breath of the Wild* makes this moment of scopic pleasure mandatory. In order to prepare players for the dangers of the rest of this open world, the designers confine the player to a central plateau. On a practical level, this in a response to the problem of providing the player a safer, lower-stakes environment in which to experiment with game controls and commit errors. However, this structure also develops a particular aesthetic experience of the space. Once the player completes the introductory sequences and proves their acclimatization to the game’s mechanics, they are gifted with a glider, which allows them to smoothly descend into the surrounding land. Their consumption and colonization of the landscape begins.

Let us return to Kant and Burke and the demasculinization inherent in the concept of the sublime. In open world games, players enact this recovery of reason and control by actively consuming the initially “sublime” landscape. Standing at the edge of the cliff and overlooking the horizons becomes “both an acknowledgement of the sublime and a statement of the intent to demystify it.” When a game begins by overwhelming the player with the grandness of its world, this game inevitably “transform[s this grandness into] a set of discrete manageable spaces.” In *Breath of the Wild*, this materializes through consumption of the chunks prescribed by each tower. No need to explore and experience every corner of this world—the downloaded map will do that for you. The player can always be assured that, no matter the scale of this world they are faced with, any discomfort caused by the sublime can be subsumed through exploration and colonization. When the player receives the glider and leaves the plateau, this new form of fast travel suddenly puts the once distant and overwhelming landscape into safe and easy reach.

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93 Howard, “Stirring the Pot.”
The game’s investment in the sublime reappears later, in one of its smaller closed loops: the Leviathan quest. The player can initiate this quest by meeting three brothers, all of whom are self-proclaimed scientists with different theories on why the great Leviathans of legend died. After (or before) meeting these brothers, the player explores the far reaches of the map and finds enormous, breath-taking creature skeletons in various states of repose— jutting out from a cliffside, nestled deep in a gigantic underground ice cavern, or draped across shifting sands mid-desert. The discovery of these skeletons evokes the sublime on several levels: firstly, the sublime settings in which these skeletons are found, amidst unforgiving wildernesses; secondly, the sublime of imagining the magnitude of these beasts during their prime; and lastly, the overwhelming grandness of deep time suggested by these fossils. This quest recalls the fascination of Victorian geologists with the unimaginable scales of time suggested by newly discovered fossils.  

Through this quest, *Breath of the Wild* reveals its investments in the aesthetics of the sublime as a support for the breadth of detail and wonder of discovery its open world design prizes. However, the quest itself in turn structures the player’s experience of the game environment in a certain way. If the player meets the scientists first, they will organize their itinerary around a search for these fossils. Even if the player does not meet the scientists, the game registers this quest in their log as soon as the player takes a picture of the first fossil. If the player first experiences their discovery of a Leviathan fossil as a moment of the sublime, of transcendence and devastation, their experiences of the other fossils will inevitably imbue them

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94 These geologists would often evoke romantic notions of the sublime in order to express this fascination. Heringman, *Romantic Rocks, Aesthetic Geology*. 50
with more control. They will log these creatures through visuals and identify, record, and subsume this experience under dominion of rational science, and that will be that.

These moments exemplify how open world games evoke the sublime only to deconstruct it and return a sense of power and control to the player. In fact, the player is subject to a designed system that seeks to organize and direct their gameplay in a particular fashion, toward preset goals. The game makes subjects of these players and teaches them to invest in the ways they can extract from the landscape. Through its highly-detailed environments and its illusion of smooth space, open world offers players a sense of unboundedness. This unboundedness plays into the colonial rhetoric of the wide-open frontiers, simply awaiting the explorer’s mastery. While players can assume alternative dispositions, walk, wander aimlessly, play slowly, or drift, the game’s structure will always seek to pull them back into a designed flow. In this sense, open world games pose tensions between freedom and limited structures, between player agency and design, between rapid consumption and slow wandering. The contradictory nature of the ethics of open world games introduces complexity to the narrative of green game studies. Rather than either cultivating environmental consciousness or misrepresenting ecological functions, open world games offer a site of ambiguous and inconsistent interrelationships between and among game, player, and space.
CHAPTER II: NAVIGATING HYRULE: ZELDA’S GAMIC CARTOGRAPHY

If open world game design interpellates the player as a rational agent and a master of nature, we may next ask: how is this interpellation concretely achieved? Especially as open worlds become more and more popular, how do game designers organize the player’s experience in order to effect a particular response to the game space (namely, the desire to explore it)? To answer this, I will outline the design practices of game maps, including their aesthetics and functions in gameplay. My analysis focuses exclusively on maps in the Legend of Zelda franchise for a few reasons. Notably, many of these games fit into the open world model, and they chart a relationship between open world practices and map design over time. This franchise also narrows our focus to the adventure game genre, which adds another layer of aesthetic expectations. The adventure game poses the player explicitly as “explorer” and suggests a romanticism of the environment. It offers the player what seems the innocent notion of exploring simply for the joy of exploration, for the love of experiencing new places. And yet, elements of gameplay like the use of maps define how this exploration is executed.

The map bears the resonances of its long history as a tool for regimes of colonization. The development of the map as object reflects its use in controlling populations and streamlining military conquest. Because of these resonances, the map screens of the adventure game genre (re)configure the players’ experience of environments. The overworld and dungeon maps of the Zelda series position the player in a network of power relations with the atopia of the game’s space and with a codified version of nature.
Maps have played a central role in the development of the Legend of Zelda series and facilitate the player’s negotiation of game space. The history of screen maps begins with the heads-up display (HUD) mini-map and dungeon maps of the original game for the Nintendo Entertainment System (1986). Later, the first overworld map screen appeared in A Link to The Past (1991). In these earlier 2D games, maps provide supplementary materials to help the player interpret and navigate a space that functions in distinctly different ways from embodied 3D space. The incorporation of these maps may have been a response to the player practices of creating hand-drawn maps to supplement gameplay in in the 1980s. Over time, as the series transitioned to mainly 3D graphics, the relationships of these maps to gameplay also transitioned. The maps in Zelda titles fluctuated in appearance and purpose over the course of the series, morphing lately into the highly sophisticated topographical maps of Breath of the Wild (2017), complete with a militaristic, aesthetically technologized interface design.

Considerations of maps in games cannot be isolated from the meaning-saturated significations of earthly maps. In our society, maps provide a tool for representing space with

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95 Wills, “Digital Dinosaurs and Artificial Life,” 402.
cool, detached rationality, for laying out spaces through the defining codifications of lines and grids. “That maps can produce a truly ‘scientific’ image of our world... is a view well embedded in our cultural mythology,” but in fact “[m]aps are never value-free images.”96 Critical studies of cartography show that maps, by their very function as a 2D representation of 3D space, must necessarily elide, “distort,” and ultimately “lie.”97 Meanwhile, the construction and use of maps are steeped in a history of use in military, colonial, and state control (which are not mutually exclusive categories but rather intertwined systems); they ultimately constitute one of many methods of surveillance that establish and reinforce these systems.98 Thus, the use of maps in games carries with it both the perceptual structuring caused by a delimited ordering of space but also the rhetorical implications of control, power, and rationalization.

Loosely, the kinds of map mechanics in Zelda titles can be divided into the above-mentioned categories: dungeon maps, overworld maps, and mini-maps. Each of these three types function differently in gameplay, and they each have ramifications for how the player is taught to read and experience the space. Dungeon maps depict the more puzzle-oriented, built space; the overworld map presents the player with an overarching representation of the more open landscapes of the whole territory. Both of these are usually accessible via a secondary menu screen and provide information about the relationships between different spaces. Usually included as part of the HUD, mini-maps provide a representation of the location the player currently inhabits (either in a dungeon or in the overworld) overlaid on the play screen. In this way, the mini-map allows the player to establish an overhead view of the avatar’s position in

97 Monmonier, How to Lie with Maps, 1.
space. Dungeon maps and mini-maps are usually simplistic and straightforward, while overworld maps have tended to be more decorative and elaborate in their representations of landscapes. In terms of acquisition, mini-maps require no effort on the part of the player, whereas the other two categories often do. The player must find the discrete dungeon map item in treasure chests inside the dungeons—these maps are often paired with the “compass” item, which, following *Link’s Awakening* (1993) took on the role of revealing on the dungeon map where special items are located inside the dungeon.

Overworld maps often start out blank or obscured, and new areas reveal themselves upon the player’s further exploration. The clearing away of dark fog on the map (as in *Majora’s Mask*) or the filling in of detailed, water-color-esque depictions (as in *Skyward Sword*) is designed to aesthetically delight and charm the player. In these processes, the game plays off of the pleasurable experience of dispelling mystery with the light of knowledge. As James Newman points out, “at least part of the pleasure of videogame play is derived from the transformation of place to space, the eradication of the unknown and the bringing of uncertain geographies under the control and influence of the player.”\[^99\] Just as the player drives out the darkness of impurity in games of ecological recovery, they drive out the darkness of the “unknown” by recording and cataloguing. In this sense, exploration serves as a practice of bringing environments under yoke of rationalism. The game rewards the player for this process with the image of the completed map.

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\[^99\] Quoted in Murray, *On Video Games*, 162.
Figure 12: Sea chart from *Wind Waker*. (Nintendo, 2002; image via Zeldapedia)

This specific aspect of the overworld maps positions the player in the role of the romanticized explorer. As suggested by Wills (2002) and Jenkins and Fuller (1995), part of the pleasure of the exploration of game space resembles and reflects the exploration (and ultimate colonization) of the “New World.” In the typical overworld mechanic of *Zelda* titles, players must explore in order to gain access to certain kinds of information about the space and to orient themselves within that space. For example, in *Wind Waker*, the player is encouraged to learn the names and shapes of the various islands. The names and shapes of these islands orient the player in the riddles that comprise certain in-game puzzles, such as the triforce piece quest or the Korok tree quest. In this way, the structure of exploration in the game is deliberately organized in order to elicit the joy of discovery and, in some cases, the pleasure of stumbling upon “untouched nature.”

Paradoxically, what may feel most serendipitous to the player is in fact thoroughly structured by the game’s design.

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100 Wills, “Digital Dinosaurs and Artificial Life,” 402-403.
While this relationship between exploration and knowledge of the area is sketched out in earlier games, the active construction of the map assumes a new inflection in *Wind Waker* (2002). Because of the game’s mainly oceanic setting, the map is positioned as a “sea chart.” This chart begins as a grid of thirty blank squares that, despite its precise geometry, simultaneously evokes the yellowed and tattered maps of 17th century colonial seafarers (see Figure 18). Sprinklings of islands provide the only landmarks to navigate by in an undifferentiated seascape. The player can only record these maps by using bait to bribe a nearby fish to draw the local characteristics on the sea chart. Given the thirty squares of the game map’s grid (with about one or two islands in each), as well as the forty-six treasure charts, this mapping practice takes a great deal of time and patience on the part of the player. This time and patience are compounded by the boat controls, which feel unnatural and disconnected when compared to the on-land avatar controls. Unlike the streamlined movement of tilting the joystick to cause the character run or walk, sailing requires that the player take additional forces into account. For example, the titular wind creates a friction against which the player navigates. The player must slow down and coordinate their position on the map, the position of their destination, the wind direction, and the angle of the sail in order to successfully navigate. In this situation, they may feel the frustration of their sense of agency not clearly and concretely translating to the screen. The mapping practice also forces the player to internalize a style of navigation that requires toggling between the 2D map representation and their presence in the 3D space since the top-down view of the islands elides or distorts their dimensionality.

102 This kind of mapping practice notably recreates the situation of colonization, as colonizers use the knowledge local or native inhabitants to help them understand the territory.
The many hours spent traversing the cerulean cel-shaded waters slows the player’s experience of travel and their consumption of the space. As mentioned in the previous chapter, the “slowness” and redirecting of game time in walking simulators is directly connected to methods of travel. This temporal adjustment opposes the typical gamic practices that encourage the player to rapidly consume space and that therefore feed the player into rhetorics of environmental master and colonialist control. Early in the game, ocean travel takes time and patience as the player learns how to use the wind direction through trial and error.\textsuperscript{103} While other games allow for free exploration, \textit{Wind Waker} asks that the player struggle to explore. This centrality of elaborate map-building continued in \textit{Wind Waker’s} direct descendants, \textit{Phantom Hourglass} (2007) and \textit{Spirit Tracks} (2009). These two games followed the aesthetic design of \textit{Wind Waker}, which is more cartoonish than previous titles and highlights cel-shading. Moreover, they inherited \textit{Wind Waker’s} emphasis on alternatives to foot travel: in \textit{Phantom Hourglass}, the player continues to sail the high seas, while in \textit{Spirit Tracks}, they employ railway travel. In the former, the player cannot travel to certain locations without first finding the corresponding sea chart, and in the latter, they cannot travel anywhere without first charting a path on the map.

More important than the emphasis on methods of travel, these two titles introduce embodiment to gamic mapping practices. Using the touch screen capabilities of the Nintendo DS console, the player can draw and write notes on their map, customizing them in ways unavailable in other games in the series.\textsuperscript{104} In this sense, the player translates the relationship between map and game

\textsuperscript{103} Later on, the player can bid on a new sailcloth that increases their sailing speed, but this item is not encountered in the main narrative of the game.

\textsuperscript{104} Even, for example, \textit{Breath of the Wild}, in which you can only mark certain locations with a limited number of pre-designed icons.
space through the filtering of their own experience and understanding of the space. The use of inscription in these games recalls earlier practices of creating maps in pen and paper for games that lacked an in-game map entirely. 105 This ability to record one’s own, specific experience of the game space suggests a cartographic practice that invites the player to reorient themselves in the game space and to dwell on its details.

Rather than mapping, this practice resembles the recording of itinerary. An itinerary, for example, records the movements of a specific journey at a specific time, a “log” of an experience. According to de Certeau, the map “colonizes space” by providing “a totalizing stage on which elements of diverse origin are brought together to form the tableau of a ‘state’ of geographical knowledge.” The map therefore suggests a stability and homogeneity of place, forgetting the more fluid itineraries that were the “condition of its possibility.” 106 Maps are meant to “exhibit the products of knowledge” and produce “legible results.” 107 So, the uniform maps of most Zelda titles provide the player with the same, totalizing image of space, no matter the specific manner in which the player first encountered the different locales depicted. The ability to log one’s own notes of one’s specific journey aligns the practices of the DS titles with the fluid and heterogenous itinerary model.

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105 For example, the first Legend of Zelda title lacked a map feature. Because of this, hand-drawn player maps were common practice.
106 de Certeau describes itinerary and maps as being methods of different historical moments, as well. The itinerary transforms over centuries before the map proper begins to emerge. Further, maps as we understand them today grew out of transformations in scientific thought, and over time they rejected the more narrative, spatializing practices of the itinerary to create a more abstract, totalizing, and rational image. See The Practice of Everyday Life, 120-121.
This difference between itinerary and map follows de Certeau’s concepts of “tactics” and “strategy.” For de Certeau, strategy is “the calculation (or manipulation) of power relationships” by an isolated subject that separates itself from that which is “other.” Strategy represents the “typical attitude of modern science, politics, and military strategy,” which makes use of panoptic practices and “produces itself in and through [the power of] knowledge.” Tactics, meanwhile, “is the space of the other” and “the art of the weak.” The tactical approach gives up the power of vision and of delimited place relations in return for more fluid and heterogeneous practices. De Certeau also notes that “Tactics are procedures that gain validity in relation to the pertinence they lend to time.” In this way, tactics are invested in time-space relationships in ways relevant to our considerations of “slowness” and dwelling. This tactical approach suggests a low-to-the-ground, engaged practice of being with the terrain, as opposed to the panoptic vision of strategy.

In contrast, some games use the overworld map to demonstrate the player’s increased mobility and command of this space. In *Majora’s Mask* (2000), for example, the overworld map is practically useless for navigational purposes due to its highly stylized rendering; instead it merely shows the player where they have activated owl statues (save points), to which they can warp immediately after a brief cutscene. This style of map becomes a record of which locations the player already has some control over (especially considering that, in *Zelda* games, arriving at new locations often requires an overcoming of environmental obstacles by way of new gadgets/abilities). Mary Fuller and Henry Jenkins, in their early game studies reading of game

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109 Ibid, 38.
spaces, write: “Once you’ve mastered a particular space, moved past its goalpost, you can reassume play at that point no matter the outcome of a particular round. These mechanisms help us to map our growing mastery over the game world, our conquest of its virtual real estate.” The style of map used in *Majora’s Mask* acts merely as a catalogue of this mastery, a reminder of the player’s ever-increasing motility.

**Figures 13 and 14: Overworld map from *Skyward Sword.* (Nintendo, 2007; image from Zelda Wiki). **Overworld map from *Twilight Princess.* (Nintendo, 2006; image from Zeldapedia).**

Warping, therefore, is the central mechanic that facilitates this motility and influences how players traverse and experience the space.\(^{110}\) Players often access their warp abilities through the interface of the map screen, visually linking the players cartographic record and the ability to fast-travel. As opposed to travelling on foot, which can take time and put the player through the challenge of fighting the same enemies over and over again, warping instantaneously to a distant location can be a seductively convenient gameplay feature, employed to keep players in a state of pleasure and ever-attentive action seeking. Warping keeps players immersed in the

\(^{110}\) Warping describes the act of “fast-travel” in games, when the player can pick a location and appear there instantly.
quickened rhythm of gameplay, removing the possibility for vulgar or radical boredom.\textsuperscript{111} As Douglas Wilson points out, warping “prioritizes destination” as opposed to the journey itself and ultimately “annihilates space” and the players presence in/experience of it.\textsuperscript{112} Soraya Murray, in turn, ties the velocity of fast-travel mechanics to “the imperial drive toward expansion,” drawing on what William Huber called “the satisfaction of this telescoping mobility.”\textsuperscript{113} Warping becomes the antithesis of the mode of dwelling and wandering considered in the previous chapter. Though \textit{Wind Waker} forces the player to undergo an embodied mapping practice, the later introduction of the ability to warp (by way of the map interface) interrupts and possibly dismantles the embodied experience of place/space.\textsuperscript{114} Aligned with the model of mastery suggested by strategic approaches to space, warping proves a direct adversary to the slow travel of “dwelling” and erases the possibility of reorienting oneself to the space.

Despite the usefulness of the opposition of strategy and tactics for this analysis, some scholars have questioned how completely strategic approaches define the gamic experience. These scholars pose the experience of gamic navigation as a complex and contradictory practice that negotiates strategy and tactics in unexpected ways. For example, Daniel Golding suggests tactics and strategy as a method of unravelling the misconceptions of game studies more broadly. He argues that while game studies scholars have focused on how the configurability of games trains players in the methodologies of domination and control, the player’s actual experience takes the form of tactical navigation. He highlights the ease with which players get lost in

\textsuperscript{111} Richmond, “Vulgar Boredom.”
\textsuperscript{112} Wilson, “Look Before You Warp,” 17, 22.
\textsuperscript{113} Quoted in Murray, \textit{On Video Games}, 162.
\textsuperscript{114} Ibid, 24.
landscapes and fail to measure up against the ideal of an utter and complete mastery; when players move through the game space, he claims, they are always missing information, unable to see the game in its entirety and make totalizing, critical judgements. He juxtaposes “the holistic ‘from above’ viewpoint of the strategies of designers and programmers” with “the low-level, ‘from below’ viewpoint of the experiential tactics of the player.” In this sense, the player’s tactical movement through game space proves more influential on their spatial experience than the designers’ structuring logics. Golding proposes that “[j]ust as the walker makes decisions, selections, and appropriations via their movement through city space, the player only actualizes some of the possibilities of the videogame text in their gameplay session.”

This recalls the discussion of wandering and dwelling in the previous chapter, offering the practice of walking as a rejection of the logics of mastery and control.

Bernadette Flynn’s thorough description of the phenomenology of navigation in video games draws out the relationship of player to space. Though the game’s system may limit the structuring of space to Cartesian grids and Western perspectival logics, the player’s embodied experience of traversing the space is irreducible to these structures. She writes:

Navigating a terrain is understood as a constellation among bodies, imagination, and space, or, in game terms, the experiential body and the active imaginative engagement of the player responding to the dynamic space of the virtual game world. The player’s involvement with geographic orientation and direction requires detailed negotiation of landscape and close readings of space. Memorizing and mentally mapping the landscape is vital in order for the player to remember where s/he has been, where s/he might be going, and how s/he might return. The negotiation… is not merely a habit of reading but requires kinaesthetic agency and bodily memory. From this, players perform their spatial

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115 “To Configure or to Navigate? On Textual Frames,” 42
journeys, read the landscape as encoded memories, and in turn change the landscape through their actions.116

These scholars remind us of the value of the player’s on-the-ground experience of the space. For Flynn, the player does not just rely on on-screen maps but also interacts with the space based on how they recall it in memory. As players become more familiar with a space, they may begin to rely on maps less and less, instead relying on their tactical knowledge. However, the map interfaces of games are designed to encourage the player to rely on strategic approaches. And as game world maps continue to expand, players are less and less likely to become familiar with any one area of a game space.

However, some games train the player to align themselves more closely with the strategic approach than others. For example, we might turn to the player’s navigation as organized by the tower structures in Breath of the Wild. Like many other open world games, Breath of the Wild employs a tower-reveal structure. In this setup, the player finds and climbs a tower to reveal more of the map. Critics have derisively deemed these “Ubisoft Towers” because of their ubiquity in titles developed by Ubisoft like Assassin’s Creed, Far Cry, and Watch Dogs.117 Because of the pleasure of the panoptic, these towers serve the game design by organizing the player’s exploration of the space. They seem to beckon to the player, and their attractiveness allows the designer to inscribe some structure into what is usually advertised as unstructured play. As some have noted, this results in Link “seem[ing] to bounce around from tower to tower

117 In many of the games that include these structures, the player is also handed a set of objectives for the newly mapped area. Though this does not occur in Breath of the Wild, the acquisition of towers and their included maps still organizes the player’s experience of the space.
like a cellular signal.” Rather than recording their own, incidental itinerary through the space, players plan their exploration based on which tower is closest or easiest to find. The map interface in *Breath of the Wild* provides the player with markers that they can place on the map by scanning the horizon in a binocular view. From the high vantage points provided by the towers, the only shapes that appear distinctly on this horizon are other towers. The player marks these on their map, and so the cycle continues. Once a player activates a tower, they can warp to this tower at any point (not unlike the owl statues in *Majora’s Mask*). If they realize they need to travel to a certain location, they will then plan their journey around the tower nearest to that location. In this way, the strategic approach of the tower design is bound up with the map interface in order to organize the player’s experience of the space.

As the previous discussion shows, the structures of overworld maps encourage strategic thinking. Warping mechanics are channeled through the map, emphasizing the player’s mastery of the space. These maps reward the player visually with the aesthetic pleasure of dispelling darkness. The map then becomes a portrait of the player as commander of the landscape, an image that reflects the ease with which they can travel. It also signals the player’s ownership of the space: when the player completes the overworld map, they become master-over-the-world.

Mini-maps, though much simpler in design than the overworld maps probably receive the most frequent use during gameplay. As part of the head-up display, they remain on the screen unless turned off by the player. As mentioned earlier, they help the player read and understand the position of their avatar in relation to the rest of an area. They also describe the shapes of discrete chunks of an area, helping the player to recognize corners, borders, and exits. The

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118 Howard, “Stirring the Pot.”
history of the head-up display influences how these mini-maps signify. The HUD evolved from technology used in fighter jets during World War II. Such displays of information, overlaid in the pilot’s field of vision, allowed the pilot to keep their head in an upright position and their vision unimpaired. This technology also helped aircraft pilots to target enemies more easily. Over time, HUD was standardized across military vehicles.\textsuperscript{119} Like much innovation in game technology, the use of the HUD in the game is born directly from the game industries’ origins in the military-industrial complex. The HUD allows the player to keep their eyes on the action, just like the soldier at war. It also assists them in tracking and targeting enemies, as “the gamer exploits the anxious relation of self to other in the act of targeting.”\textsuperscript{120} This visual display positions objects within the player’s view as things to defend against or to control.

Despite this history, the relationship between the player’s exploration of the space and the mini-map is a negotiation between 2D representation and 3D space. Alenda Chang claims that players perform the ecologist’s work of “ground-truthing” as they navigate terrain. For ecologists, ground-truthing is a procedure of calibrating the measurements of overhead technologies to the tactical, low-to-the-ground observations made while physically navigating terrain. According to Chang, “Players of games regularly engage in a kind of ground-truthing when they consult overhead mini-maps or other navigational aids,” thereby enacting a reconciliation of multiple scales.\textsuperscript{121} This scalability may suggest ecological thinking to the extent that it encourages players to think through the relationships between systems. However, in their oscillation between strategy and tactics, the player hovers in ambivalence. Instead of calibrating

\textsuperscript{119} Kim, \textit{Rupture of the Virtual}, 53-54.  
\textsuperscript{120} Wark, \textit{Gamer Theory}, 130.  
\textsuperscript{121} Chang, “Think Galactically, Act Microscopically?” 228.
the mini-map through their on-the-ground experience of the game space, they may instead calibrate their tactics to the strategy of the mini-map.

The more concentrated (less sprawling) design of dungeons introduces another inflection of mapping practices and their mediation of game space. Dungeon maps may initially seem unrelated to conceptions of environment. After all, many dungeons in Zelda games represent the “built spaces” (here we are thinking representationally— in fact, all game environments are “built”) of ancient religious buildings, ruined castles, or abandoned cities. However, in remembering the constructed fallacy of the nature/culture binary, we may consider how these spaces also speak to our understanding of environment and presence. Dungeon maps have proven a popular gameplay mechanic, employed across the broader action-adventure genre. These maps allow the player to navigate spaces that often blur together in memory because of either monotonous graphic design or complicated structure. Traditionally, much like overworld maps, the game records new rooms on the players’ map once they have entered that room. This stage of dungeon crawling echoes the exploratory practices of the overworld. However, when the player finds the dungeon map item in a treasure chest, the entire map’s structure becomes available to view. This changes the nature of the dungeon’s challenge— the player now has a sense of the dungeon’s overall structure, but they may not yet know the order in which they must navigate its rooms or the dangers that might lie therein.

Often, dungeon maps display nothing other than the shape of the rooms and their organization from a top-down, two-dimensional view. Designers often plan dungeons around a puzzle or maze-like organization. As players travel around the dungeon, they must do the mental work of remembering the defining features of the rooms, including internal structure, because the
map provides only limited information. This mental work leads to a negotiation between the player’s experience of the game space and the representation of that space provided by the map. This negotiation includes an oscillation between the two dimensions of the map and the three dimensions of the space. Notably, even earlier 2D titles toyed with conceptions of an understanding of 3D space. For example, Eagle’s Tower dungeon in Link’s Awakening begins with seven levels, and the player must use their understanding of the space’s verticality in order to traverse it. By jumping through a hole in a particular spot on one floor, the player can aim themselves to land on a platform on the lower floor. Over the course of the dungeon, the player breaks down pillars that hold up different floors so that several of the floors merge together as one. The player then must recall how these floors were laid out in separate, vertical space in order to traverse the new composite floor.

Of course, this use of three dimensions to design puzzles became more central to the dungeon experience in the 3D games. In these games, the maps often do not depict large structural components of the dungeons, which can be used to dramatically alter how the player traverses the dungeon. For example, in the Great Bay Temple in Majora’s Mask, a system of machinery alters the water levels and flows of the dungeon. The movement of this water can either block or facilitate the player’s movement to certain rooms. However, this machinery does not appear on the map. In order to successfully navigate the dungeon, the player must remember which switches are marked with which colors and where the color-coordinated pipes lead. This deliberate use of the 3D space reveals the ultimate inadequacy of the 2D maps to display the embodied environment. Simultaneously, game design researchers like Mark Brown have noted how the combination of the 2D maps and the 3D space elicits a unique experience of dungeon
design that is both more challenging and more rewarding for the player. This may be ground-truthing by another name, eliciting pleasure through the tension between dimensions. By delivering a model that itself reveals the map’s inadequacy, these games invite the player to question the map, as a strategic model, and its ability to effectively describe environments.

![Map screen from Breath of the Wild](image via GameRant)

**Figure 15: Map screen from Breath of the Wild,** (Nintendo, 2017; image via GameRant).

This tension between 2D maps and 3D space takes on new meaning in *Breath of the Wild*. In this game, rather that miming yellowed, hand-drawn maps in the nostalgic fashion of earlier *Zelda* games, *Breath of the Wild* replicates the maps of the military-industrial complex. The map screen opens diegetically on the screen of the “Sheikah Slate,” a device not unlike the Nintendo Switch (the game’s console), with a beep and a glitter of rendering that aestheticizes the technologically enhanced visualizations of contemporary Geographic Information Systems (GIS).

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122Brown, “Majora’s Mask’s dungeon design.”
Figure 16: Screenshots from *Breath of the Wild*. Zelda holding the Sheikah Slate; the front view of the Sheikah Slate (Nintendo, 2017; images via Zeldapedia and The Verge).

Echoing the representation of vertical space in the first overworld map in the franchise, *Breath of The Wild’s* overworld map provides the player the precise topographical details of the landscape. These details are especially relevant since the game encourages the player to navigate by using climbing mechanics to survey the landscape from above. The HUD includes a mini-map (which shows only a grid, the player’s position, and any markings the player has pinned on their overworld map) and a series of other measurement tools (a thermometer, a compass, a clock, a weather descriptor, and sound level meter). These tools indicate the game’s investment in scientific, “objective” measurements of the environment. However, the player can easily turn off these tools via the settings screen, something many players choose to do in order to focus on exploring the space without disruption or distraction. This choice suggests the tension between the desire for an embodied experience of the space and prescriptive scientific measurement tools. Here again, de Certeau’s concepts of tactics versus strategy becomes useful. By rejecting the delimiting measurements of the game space, the player may be instead choosing to assume a tactical approach. Soraya Murray, writing about *Phantom Pain*, claims that this

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123 See Figure 17, the map of *A Link to The Past*.
124 This use of vertical navigation also reinforces the desire for the panoptic.
125 Hamilton, “Video Game Mini-Maps Might Finally Be Going Away.”
“information overlaid onto the in-game visual space” puts an emphasis of the management of resources. Perhaps in their refusal of these devices, the player rejects managerial or technocratic modes of experiencing the game world. However, the player’s desire for a screen uncluttered by these tools also gestures toward the longing for a “clean” and “pure” experience of natural spaces.

The system of technological visualizations in Breath of the Wild aligns the game with many of its more obviously militaristic contemporaries. Playing Breath of the Wild resembles nothing so closely as Metal Gear Solid V: The Phantom Pain, from its usage of blue-toned topographical maps to its inclusion of sneaking mechanics. Metal Gear Solid V focuses on a mercenary avatar completing tactical missions on in Soviet-occupied Afghanistan in the year 1984, and it is a game entrenched in the aesthetic representation of military operations. Now, rather than romanticized, adventurer-colonialist, Link and his maps also mime the fetishized representations of the modern soldier. Hyrule is not only damaged by ecological destruction but also occupied by Ganon’s minions. These categories represent sides of the same coin, different aesthetics for the same ideologies of mastery and control. J. B. Harley suggests that “[m]ilitary maps not only facilitate the technical conduct of warfare, but also palliate the sense of guilt which arises from its conduct.” When this style of mapping is transferred to the game, it glorifies this approach, buying into the “the salient lines of the paper landscape [that] foster the notion of socially empty space.”

Taking cues from this military aesthetic, the dungeon maps in *Breath of the Wild* assume new structures and designs, which have direct repercussions for the player’s experience of dungeon space. Forgoing the pairing of 2D maps with 3D spaces, the dungeon maps in *Breath of the Wild* depict a 3D model of the space, which can be turned to view from any angle. The
designers have removed the dungeon map item, usually found in a chest after initial dungeon exploration, from this game as well: the player receives their totalizing map shortly after entering.\textsuperscript{127} Here the map is the globe representation. This globe is the miniature model, which the player can furthermore manipulate at will (from the map screen interface). This style of manipulation deviates from the earlier games, in which manipulation of the space had to occur from certain locations, forcing the player to backtrack and use cognitive mapping. Instead, the player solves the dungeon’s puzzles by manipulating the dungeon model by an array of degrees, from any place or time in the dungeon.

In the Vah Ruta dungeon— which is a giant mechanical elephant— the player can choose from 10 different angles to move the model’s trunk. By moving the trunk, the player can solve individual puzzles, such as using the trunk as a vehicle to reach a higher ledge or aiming the trunk’s spray of water at a fire. Notably, the player experiences the change in the dungeon’s formation in real-time— in previous games, these moments of transformation occur during cutscenes.\textsuperscript{128} Now, the player can ride moving mechanisms, giving them greater control over the avatar’s relationship to the dungeon. This new style of dungeon design, while providing more freedom to experiment, also hands the player the feeling of complete control over the space, dominating it the moment they enter. On the one hand, by abolishing distinct and separate rooms of the dungeon, the \textit{Breath of the Wild} dungeons refuse a delimited ordering of the space. However, when the player can view and manipulate this model from any angle, this manipulation

\textsuperscript{127} The player must retrieve the map from the first “console” in the area, downloading it much like they do the segments of the overworld map from the towers. These original consoles are usually close to the entrance of the dungeon and easy to access.

\textsuperscript{128} We may note that in game studies, much has been made of the way cutscenes strip agency from the player.
not only dips the player into the methodologies of the military-industrial complex but also removes the potential for the player to rely on tactical approaches to the space or reorient themselves in any meaningful way.

These practices make explicit the elements of gamic cartography that lean towards delimited conceptions of space, which render the environment static, knowable, manageable, and ultimately abstracted. While some games, like Wind Waker or the DS titles, have introduced elements of a slow and situated approach to recording and mapping practices, these examples represent aberrations in the arc of the Legend of Zelda series. Elaborate maps, while in earlier games more necessary for navigation of the 2D space, encourage a managerial orientation toward game space and establish static conceptions of game environments. We may question whether these maps indeed facilitate the player’s navigation of the space or whether they are imposed on the player to control and organize their experience. The way the player negotiates the relationship between the representational aesthetics of the maps and their experience of the game space ultimately speaks to their desires of how they want to commune with the landscape.
CHAPTER III: FUNCTIONAL AND AFFECTIVE ANIMALITY IN GAMES

If games redeploy the logic of Cartesian dualism, they also necessarily reify the separation of humans from other animals. For Derrida, “the question of the animal” is an issue of violence—humans employ language to cordon themselves off from all other animals, reifying separations that sanctify the systematic violences that feed animals into industrial capitalism.\cite{Derrida} The designations of scientific nomenclature in fact transform arbitrary decisions into what are accepted as concrete facts. Animals furthermore provide an ‘other’ against which the human can be defined, in its exceptionalism.\cite{Lippit} John Berger notes that “[animals] are the objects of our ever-extending knowledge. What we know about them is an index of our power, and thus an index of what separates us from them. The more we know, the further away they are.”\cite{Berger} So, as scientists observe and define species categories, they create a conceptual distance between humans and others. Language, as one of the favorite examples of what “separates us” from animals, becomes both weapon and defense. Like the broader nature/culture dichotomy, these separations refuse to acknowledge necessary entanglements of human and other-than-human lives.

We may ask, then, what is the ontological role of the nonhuman animal in videogames? When we encounter representations that signify “animal” in a videogame, what can we do with them (in both the sense of accomplishing feats through them and the sense of doing things in collaboration)? In an effort to explore such questions, this chapter charts a constellation of the many animal forms and figurations in games. Previous chapters have investigated the game’s presentation of the open world environment as the imagined ideal of nature and have explored

\begin{footnotesize}
\begin{itemize}
\item \cite{Derrida} Derrida, \textit{The Animal that Therefore I Am}, 30.
\item \cite{Lippit} Lippit, \textit{Electric Animal}, 10.
\item \cite{Berger} Berger, \textit{About Looking}, 16.
\end{itemize}
\end{footnotesize}
the concrete methods through which the game orients the player toward the space. This chapter will focus on the entities in that space. In videogames, animals figure as both separate from and part of the game “environment.” Their functional qualities position them as tools or resources, but they also serve affective roles that reflect the player’s desire for meaningful attachments to the nonhuman. So, as a player interacts with these objects in the game space, they experience two different layers of the object: the functional layer and semantic layer. In the following, I will develop a taxonomy for the main functions that animals enact in the videogame. These are not prescriptive categories that all game animals must fall into, but rather descriptions of how animals have been designed and signify in the gamescape. Nonhuman animals appear as nodes in a network of subject-object interactions that ultimately construct the gamer’s subjectivity. In this network, these nonhuman figures both manifest certain cultural meanings through their representation of the “animal” and embody specific mechanics for the purposes of the gameplay. These animal shapes shape what we can do in the game space and shape that space itself.

When playing a game, particularly a single-player game, anything that is not the player avatar necessarily becomes an object. The way the player relates to these objects is conducted through instrumentality. For example, if this human nonplayer character (NPC) is a trader, they then become the function of marketplace buying and selling. In this sense, humanoid NPCs are as much objects as animals in the game space. Yet, the player cannot do with humanoid NPCs the same kinds of things they can do with animal NPCs. For example, a player can ride a horse, but they can’t ride a human. Similarly, the player can negotiate with a marketplace NPC in a way that suggests two-way interaction, while animal NPCs usually only offer a one-way flow of agency.
The player’s experience of the game space is also defined by the objects they meet in the space. In *Queer Phenomenology*, Sara Ahmed suggests that just as our orientations mold and shape objects, these objects also constitute our orientations. The player’s subjectivity, then, is directed and shaped by the objects they encounter. With this theory of orientation in mind, the next section categorizes the types of animal figures in games based on what they do and what the player can do with them.

*Animals as Enemies*

Animals have long served as gamic antagonists. In fact, one could claim that all game enemies, humanoid or otherwise, are treated as nonhuman because of the way the game constructs them via their deindividuated bodies and their disposability. When the animal functions as enemy, it aggressively attacks the player, inciting the player to fight off and ultimately kill it. For examples, we might look to the wolves and bears in the original *Tomb Raider* (1996), which attack suddenly, violently, and without pause. We might also consider the recurring wolfos in most Zelda titles as well as the wolves that wander the mountains in *Breath of the Wild*. The latter, unlike most animals in the *Breath of the Wild* world, will initiate a hunting sequence with their pack as soon as the player enters their radius. They will only begin to flee if the player kills a member of their pack. In these cases, the game describes animality in terms of dangerous “wilderness” that must be disciplined.
**Animals as Companions**

Simultaneously, animals often assume companionate roles in games. Here, animals assume the disposition of the garden or the pastoral, providing help and support in an inoffensive, domestic way. Canine companions have a long history in games. For examples, we might consider Dogmeat in *Fallout 3* and *Fallout 4*, D’Dog in *Metal Gear Solid V*, or the companion dog in *Fable II* and *III*. Often these companions serve as tools for specific ancillary purposes. For example, the dog in *Fable* games can sniff out treasure and attack enemies. D’Dog can attack, distract enemies by barking, or serve as a detection system for things like enemies or medicinal herbs. If the player raises their bond with D’Dog, they are rewarded with D’Dog gaining new skills. In this sense, the game rewards the player’s affective response to the animal object with increasing the object’s practical value.

These companion animals can also represent the domestication of the wild. In *Breath of the Wild*, the player can use an amiibo to summon Wolf Link from *Twilight Princess* to serve as their companion. If an enemy or animal comes within the player’s radius, Wolf Link automatically attacks them. The player can command Wolf Link to “stay,” and if the player gets too far away, Wolf Link will warp to their location. These mechanics gesture to the ideal of the “loyal” dog companion. Satoru Takizawa, the game’s art director, explained that his reasoning for adding Wolf Link had to do with a sense of companionship: “Playing this game can be a really lonely journey, so I think that having a dog companion as you travel through the world is really nice.” This idea of loneliness articulates an orientation toward the grand space of *Breath*

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132 An amiibo is a collectible toy figurine that connects to the game software to provide extra game content.
of the Wild’s open world, one of disempowerment or at least negative affect rather than one of mastery and contentment. The great expanses of mostly uninhabited spaces invoke a feeling of loneliness and insignificance in the player. However, the presence of the companion wolf-object alters the experience of this space, reshaping it and the player’s orientation to it by reassuring the player of their humanoid mastery. This relationship demonstrates how some nonhuman animals serve an affective purpose in gameplay.

Animals as Mounts

Horses are the most common animal mount. As mounts, animals serve the same fast-travel purposes as cars, boats, or trains: they are a vehicle. For example, in Assassin’s Creed: Origins (2017), the player uses the same controls to mount either a boat or a horse. When the player approaches the horse/boat, the “mount” command appears, and the player “dismounts” to release the boat’s helm. In this sense, whether the object is a horse, boat, or car makes no difference to the player. These vehicles are all ontologically the same. Moreover, games often streamline the transition between on-foot avatar movement and mounted movement. When the player mounts an animal, their flow of embodied movement in the game space proceeds smoothly. The controls for the most part remain the same; the player tilts the joystick by degrees to control for direction and speed.

That said, some games have attempted to disrupt this smoothness by introducing new controls for mounted locomotion. Agro, the horse in Shadow of Colossus, is a famous example of this. Players often experience a growing attachment to the horse throughout the game. Green game studies scholars attribute this to how Agro is difficult and inscrutable: she is the tool that,
in her tendency to “malfunction,” becomes present-at-hand rather than ready-to-hand. Colin Milburn writes that “maneuvering the horse with the PlayStation controller is a process of coaxing and constant care” that expresses an ethic of multispecies collaboration because Agro’s “algorithm comes to stand for the nonhuman.” Instead of controlling the horse directly, the player uses the X button to have their avatar kick their heels into Agro’s sides; pressing the control stick left or right results in the avatar pulling the reins in that direction. Agro often refuses to comply, willfully changing direction or stopping entirely. *Breath of the Wild* carried over some of these characteristics in their horse-taming mechanics. While Zelda games have long employed a system of interaction with the horse while riding—the player presses A to use a carrot-shaped stamina icon and urge the horse to run faster—*Breath of the Wild* elaborates on this interaction by employing a taming system. The player must first tame horses in the wild and then build a bond with them. If this bond is not strong, the horse will be more likely to disobey commands, like Agro. Of course, it is worthwhile to note that in *Breath of the Wild*, there are random herds of horses sprinkled across the land, a standing reserve just waiting to be tamed.

*Animals as Resource*

Animals often serve as a resource in a more concrete sense as well. Hunting is a popular mechanic in many games—hunting games serve as a genre of their own, while open-world games often include hunting mechanics as a means of gathering resources for crafting objectives. In the latter, through this interaction with the animal-object, the player essentially transforms the animal-object into resource-objects, such as skins and meats. In some games, such as *Red Dead*

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Redemption and Assassin’s Creed III, this includes more realistic and gory processing such as skinning of the animals. In the more cartoonish world of Breath of the Wild, the killed animal simply poofs and their useful, craft-able resources drop from mid-air and bounce across the ground. Even the wolves in Breath of the Wild mentioned earlier, which act as enemies, can also be hunted and killed for their valuable meat. An animal may hunt the player, but they can always become the hunted in turn.

Animals as Hybrid Subject-Objects

For all the many ways animals are instrumentalized in games, some games lend their animal figures a hybrid subject-objecthood. We may think of the moments when they player must persuade the animal. The taming of the horses offered above provides an example of this. For another example, in later Harvest Moon and Story of Seasons titles, the player can gradually befriend initially skittish wild animals, from weasels and rabbits to panda bears and monkeys, by leaving food out for them. Like the human NPCs in these games, different animals have types of food that they dislike, like, or love. In this way, they are constructed as ontologically similar to human NPCs, as persuadable and capable of agency.

Nonhuman figures in games often fall into the categories of enemy, companion, mount, or resource, while they are only rarely allowed a hybrid subjecthood. In these subject-object relations, players mainly experience the animal figure through the purpose the animal serves. In this sense, the many different versions of animality suggested by the models above are in fact masks that dress their mechanisms. In the game’s ontology, the animal is the same functionally
as other objects. A horse is a car; a rabbit is a vase. Smashing a pot to retrieve its contents has the same result as hunting: you destroy in order to acquire. Animals are also in some senses the same as NPC humans—whether you shoot a bird or another person, you can loot them both. However, the animal’s skin layer encourages the player to encounter them differently. While these animal figures function ontologically the same as other objects, the player’s aesthetic understanding of them as animal can achieve a different affective result. A player may not care what happens to their car when they drive it off a cliff in a game, but they may care a great deal about what it means to drive a horse off a cliff because of the way this game object looks, sounds, and is imbued with meaning.

After categorizing the functions and significations of animal objects, this analysis now turns to the animal avatar. The animal avatar, as a site of player agency, inflects animality differently than animal objects in the gamescape. In the course of gameplay, players often assume avatar bodies that are radically different from their own in a variety of ways. This includes bodies that signify the other-than or more-than-human. From arcade favorites like *Frogger* (1981) to home console cult classics like *Ecco the Dolphin* (1992), from the cartoonish *Banjo Kazooie* (1998) to the hyper-realistic *Tokyo Jungle* (2012), the shapes, textures, and trajectories of the nonhuman body has preoccupied the videogame player for decades. The popularity of other-than-human avatars suggests the player’s interest in a negotiation of species borders.

In *Staying with the Trouble*, which explores messy entanglements as a means for response-ability and ecological reimagination, Donna Haraway emphasizes the need to part from the individualism and human exceptionalism that incited the problems of the Anthropocene. She
instead suggests turning to a collaborative mode that she calls symbopoesis or “making-with.” Her work highlights the many ways in which we can, must, and often do make oddkin with other fleshy beings. Haraway’s collaborative, entangled methodology aligns with that suggested by Shotwell and Tsing. Melissa Bianchi brings Haraway’s theories of multispecies relations to game studies through her consideration of tentacled avatars such as those of *Octodad: Dadliest Catch* (2010) and *Splatoon* (2015). Bianchi explains how “tentacles trouble the conventions of anthroponormative play within the medium, challenging players to (re)think their understanding of both human and nonhuman animal experience.”

Pushing Haraway’s approach further, Bianchi emphasizes how games encourage the player to enact their arguments and ideologies. Just as the player enacts a mourning for “nature” in *Majora’s Mask*, they “not only think alternative kinships, but also enact making them” when they play games like *Octodad* or *Splatoon.*

Importantly, Bianchi notes how the defamiliarization of the interface is central to this troubling. Unlike the streamlined controls of most human avatars, the challenge and pleasure of *Octodad*’s gameplay stems from the difficulty of orienting and moving one limb at a time. We may also note, as Rob Gallagher points out, that the model of haptic awkwardness directly opposes the masculine fantasies of mastery that accompany the medium. Games like *Octodad* interrupt the “interface orthodoxies” or “embodied literacies” that most games reproduce. This has important valances for the player’s relationship to the game world. When their relationship to the avatar as prosthesis is troubled, the player can no longer enforce their will smoothly over the

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136 Ibid, 141.
surfaces of the game space. This technique of defamiliarization is dramatized elsewhere—for example, when the player assumes the form of a colossus in the denouement of *Shadow of Colossus*. Though the player spends the majority of this game methodically hunting down and killing the colossi one by one, in this final sequence, they get a taste of a colossus’ embodied experience. Rather than enjoying greater power in the body of this great beast, the player is stripped of their mastery through “confusing controls, limited vision, and encumbered movement.”

Scholars like Lehner and Fortugno suggest that this moment of stripped agency encourages the player to realize and enact empathy with the nonhuman other. Defamiliarization and a striated agency seems, based on these examples, to suggest a fairly straightforward formula for denying the player’s sense of mastery. Games like *Octodad* show that this experience can even be pleasurable.

However, these games represent only a handful in the great expanse of games with other-than-human avatars. More often than not, game designs do not interrupt the hegemony of input. The player’s sense of the other-than-human avatar is a relationship of both fierce identification and alienation. The player gazes upon the animal, a gaze that often seeks to proscribe ahead of time what the animal is or must be, in the hierarchy of things. Simultaneously, the player desires to *be* animal, to live without language, to move smoothly through spaces without social concern or responsibility. In this way, the player indulges in their fantasy of what it means to be animal. Players do not often play as the tentacled creatures so symbolic of Haraway’s approach. Instead, they play as “charismatic megafauna,” creatures that can be alternatively “cute” or

“noble” in the player’s imagination. So, what happens when games are designed around these creatures, when alterity and defamiliarization are not at the center of design? While games like Octodad may suggest radical kinship with tentacled others, the animal avatars of many games instead enact a very different relationship with the idea of the nonhuman. What do we make of the fraught relationship between player and avatar when it does not in fact suggest a model of radical kinship? They may instead serve as symbols that sublimate nostalgic desires for lost pasts or express vague, not fully articulated criticisms of “modernity” as a broad concept. To demonstrate this version of gamic animality, this analysis turns a figure that centralizes discourses of environmentalism, cultural narratives, and affective attachments to nature: the wolf.

The wolf is an evocative figure across cultures. It suggests both the familiar, domestic dog and an untamable, inscrutable wildness, thus inscribing the garden/wilderness paradigm offered by Leo Marx. Wolves also fall under the category of “charismatic megafauna.” This term refers to those creatures that are most often used as a public relations tool for animal rights and environmentalists. The focus on such species has been a major failure of these movements, as charismatic megafauna occlude the more frightening biodiversity losses of less “relatable” organisms, many of which are central to ecological thriving, such as bugs or plants. The wolf, alongside others like tigers and pandas, represents a central example of these flagship animals. However, the wolf plays an important symbolic role that makes it uniquely suitable for analysis. For instance, it furnishes one of the most popular sites of hybrid human-nonhuman identity: the werewolf, who “queers boundaries of the human by (forcibly) reminding us that the human is
always-already animal.” The werewolf gives the lie of the scientific language that demarcates borders between and among animals, because its “hybrid body uniquely bridges the divide separating phyla and classes that are traditionally demarcated, both taxonomically and biologically, as evolutionarily distant from one another.”

Wolves also play a central role in both Japanese and American culture, two imperial powers that have influenced many of the games analyzed so far. As Ursula Heise points out, extinct species play an important role in the storytelling involved in “end of nature” narratives, especially as an expression of “unease over the consequences of modernization.” She highlights the two species of wolf endemic to Japan, the Hokkaido and Honshu wolves, as a central example of this. Though the last member of the latter species died in 1905, Japanese people have, decades later, reported unconfirmable “ghost sightings” of the wolves. According to the research of anthropologist John Knight, many Japanese people instead locate the species extinction around the 1940s and 50s. Knight and Heise both, therefore, attribute this to “contemporary unease about the modernization of Japanese society[, which] tends to crystallize around the transformations triggered in the aftermath of World War II by Western (mainly American) power; memories of the sustained wave of modernization that transformed Japan at the turn of the twentieth century is a good deal paler in cultural memory.” These two scholars highlight how the animal becomes a symbol for other cultural narratives, playing a role in the formation of collective memory. In this way, the wolf avatar, especially in these games of

142 Heise, Imagining Extinction, 63.
143 Ibid, 64.
ecological recovery, reflects a desire to connect with that which is already lost. This effect is not lost on American audiences, as the “proud” American gray wolf’s precarity remains a central marker of environmentalist efforts. To consider the role of the wolf avatar, I turn to two titles familiar from the earlier analysis: Ōkami (2006) and The Legend of Zelda: Twilight Princess (2006).

In Twilight Princess, the desire for the hybrid body emerges most clearly because the game’s premise relies on the werewolf mythos. When the game’s main antagonist inflicts the shadowy malaise of the Twilight on the world, the avatar transforms from his human body into a wolf. Throughout the game, the player seeks to banish the Twilight from various stages; thus, the player oscillates between cleansed areas (human state) and corrupted (wolf state). With the help of Midna, the player’s travelling companion and a Twilight being, the player can alternate at will between forms in any cleansed space. However, in Twilight spaces, the player is bound to their lupine body. This alternation between clean/human and corrupted/animal speaks to how, even in fantasies of a ‘greener,’ more pristine world, the nonhuman must be subsumed to maintain the purity of the human. To be animal is to be trapped, lacking agency available to the human.

The game’s designers direct player activity through the changed ability set of the wolf body. As Wolf Link, the player’s field of vision is much more limited—however, they gain special additional senses. For example, the wolf’s stronger sense of smell appears as visible trails of wafting, colored fragrances. These heightened senses allow the wolf avatar to see spirits that are not visible to the human avatar and, like the companionate dogs mentioned above, the wolf

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144 Gray wolf numbers have been on the rise and in late 2018, the House of Representatives passed a bill to delist the gray wolf and remove its protections. Gray wolves were one of the first species protected under the Endangered Species Act of 1973.
can dig up items from loose patches of dirt. Wolf Link can also walk across tightropes; perform long-distance jumps (with the help of Midna); use a “dash” ability to run faster in spurts; and communicate with all other non-human animals. Many of these abilities display cultural presumptions about and attitudes toward animals. The image of the wolf crossing tightropes—an ability certainly not more inherent to a wolf than to a human—evokes images of circus animals. The ability to communicate with any animal that is not human redeployes the arbitrary line between humans and other animals. The ability to see spirits highlights the belief that animals are more “in tune” with the natural and spiritual experience of the world than humans are. Beyond these abilities, though, much of the gameplay remains the same. The combat is mirrored—the wolf avatar can enact versions of the usual attacks, eliciting the same results (the wolf’s tail even gleams like a sword after the “spin attack” is performed). Instead of alienating the player, the design of the wolf avatar provides the player with the comfort of their haptic mastery along with the fantasy of inhabiting a radically different body. The similarities between avatar functions does not, in fact, represent an attempt to erase boundaries through the hybrid body. Instead, like most gamic treatments figures of alterity, it elides radical difference.

If *Twilight Princess* elides the differences between and among human and nonhuman animals, *Ōkami* presents the player with an essentially human avatar in wolf’s clothes. *Ōkami* came out the same year as *Twilight Princess*, and both games invest in a kind of gestural gameplay that was rising in popularity at that time.\(^\text{145}\) In this game, the term avatar returns to its

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\(^\text{145}\) *Twilight Princess* was the first *Zelda* title released on the Wii, which employed motion controls to align the Wii remote with the avatar’s sword. *Ōkami* originally came out of PlayStation2, but it asked the player to use the joysticks to draw shapes, mimicking the artist’s brush; it was later released on the Wii as well.
roots. Before its use in new media, the term “avatar” refers to the physical manifestation of a godly being. Derived from the Sanskrit *avatāra*, the term suggests the “descent” of the purely spiritual god into a concrete, fleshy body. In *Ōkami*, the spirit of the sun goddess Amaterasu descends as the body of the white wolf, and the player descends into that same body. The player becomes a celestial being, with influence on this earthly plane; the player’s world becomes the heavens while the game world becomes terra.

*Ōkami*’s controls are fairly straightforward. Like most PlayStation titles, locomotion is simply mapped to tilting the right control stick. The left control stick provides free movement of the camera. When the player presses the X button, the avatar jumps; the square button corresponds to tackling; the triangle button makes the avatar dig; and the circle button initiates interactions or, if there’s nothing/no one to interact with, causes the avatar to bark. While barking makes for a cute and aimless activity and digging for treasures is a nice perk, the wolf-avatar-player relationship isn’t seeking to defamiliarize in any sense. In fact, as the player progresses through the game, they pick up more abilities that allow them to inscribe on the landscape, changing flows of water, creating plants to use as stepping stones, or setting things on fire.

The actions available to the player alter their experience of the space. Sara Ahmed writes that “[t]he relation between action and space is… crucial. It is not simply that we act in space; spatial relations between subjects and others are produced through actions, which make some things available to be reached.” The player’s agency, as defined by the embodied avatar, changes the space and the way they move through that space. The wolf avatar removes the

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146 Morey, “Beyond Sharkness: The Avatar that Therefore We Are.”
147 Ahmed, *Queer Phenomenology*, 52.
possibility of climbing surfaces, a mechanic so central to the rhetoric of mastery in other games (especially the exploratory open world game). The panoptic remains unavailable to the wolf avatar. But the wolf-deity avatar, who can progressively manipulate the environment and its structures more and more, becomes a master of the space in a way that orients the player much like the human avatar does.

So, the lupine avatars can reproduce the same subject effects as their human counterparts. However, the avatar is always more than a simple site of identification. It is also always an object, viewed through the framing body of the camera. If the avatar is object, then the wolf avatar necessarily reproduces other-than-human animals as icons. In her overview of animals in visual culture, Hayley Zertuche explains how traditional practices of the human representations of other creatures tend to reproduce the regimes of violence that Derrida posed. For example, in contemporary culture, photography of animals doing “cute” things often results from imposing cruel and dangerous circumstances. Zertuche suggests that animals are always object; they are “always the observed [and t]he fact that they can observe has lost all significance.” However, animals will also always remain inscrutable. No amount of empathy will allow us to fully imagine what it means to live the vitally different experience of the nonhuman animal. So, the wolf-avatar simultaneously illustrates our desire to descend into the noble animal, our worship of a mythical and mysterious nonhuman nature, and represents a fully human imagining of wolfishness.

This fully human imagining necessarily manipulates the player’s affective attachment to the animal. According to Rob Gallaher, nonhuman animal characters may incite stronger

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148 Berger, About Looking, 16.
emotional ties than human characters. For example, we might turn to the iconicity of Pikachu or the emotional attachment players form with Agro in Shadow of Colossus. We might also consider the popularity of Dogmeat in the Fallout series. One journalist writes, “there are a lot of computer game characters we like and a few we’d even go so far as to say we love. Dogmeat though, despite being a definite tabula rasa, sits in a different category altogether and is the only computer game character that we’d reload and repeat significant portions of a game for.” I’m inclined to think of the charming expressivity of Amaterasu in Okami, as she cocks her head, sighs deeply, falls asleep or whines during cutscenes. Players become attached to these nonhuman figures. Their affective ties to the player may originate from the player’s paternalistic desire to protect the animal. Even Link in Breath of the Wild, who shivers when he’s cold and pats his belly with a sigh of satisfaction after he eats, incites a stronger affective response in part because of his silent animality, his bodily expressiveness, and his unquantifiable “cuteness.” The player feels responsible for him, feels a need to take care of him. Rob Gallagher writes that “[i]f animal videogame characters can often feel more alive and expressive than human ones, this testifies to the power of thinking gamic character less in terms of words and images than kinetic signatures and corporeal potentials.” Through their semantic layer of animality, the nonhuman avatar becomes both more affectively charged than the typical human avatar and more objectified.

So, the avatar-player relationship is fraught— the becoming-wolf-Link or becoming-wolf-deity posit the wolf as both an object of the human gaze and a lithe, desirable body. When

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150 Martin, “Top 10 Computer Game NPCs.”
we plug into the game, we become this relationship, an assemblage of body, machine, and avatar. As Colin Cremin points out, while the becoming-wolf of the player-avatar assemblage is nothing like an actual wolf, we may still focus on what affects this new assemblage produces. What we can do as this assemblage may key us into alternative lines of thought.

In *Vibrant Matter*, Jane Bennet suggests her theory of “distributed agency” through the concept of the “agentic assemblage.” She describes the assemblage as follows:

“Assemblages are ad hoc groupings of diverse elements, of vibrant materials of all sorts. Assemblages are living, throbbing confederations that are able to function despite the persistent presence of energies that confound them from within. They have uneven topographies, because some of the points at which the various affects and bodies cross paths are more heavily trafficked than others, and so power is not distributed equally across its surface… an assemblage is never a stolid block but an open-ended collective.”

For Bennett, the assemblage suggests the many ways in which we are entangled with nonhumans. In this sense, theories of assemblages have been useful both for troubling Cartesian logic in ecocriticism and for imagining the mixture of human and machine agency in game studies. The assemblage dissolves an understanding of the human as defined against others through their agency. The concept of assemblage also supports an understanding of the gamic situation that accounts for the multiple directions in which agency flows. Thus, when T.L. Taylor

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152 Cremin, “Becoming-Mario.”
brings the assemblage to game studies, she poses it as an “approach that suggests a circuit of relations that runs across a number of actors, human and non, conceptual and material.”\textsuperscript{154} And when Alexander Galloway draws his axes of machine and operator acts, he gestures toward the idea that agency runs in multiple directions across the surface that is “playing a game.”\textsuperscript{155} When the player plugs into the assemblage that is game, they may in fact become something other than what is usually considered “human.” When players become aware of their position in the assemblage, or aware of the multiple flows of agency, their understanding of what constitutes the human may change. For Dyer-Witheford and de Peuter, this is a “techno-social assemblage that configure[s] \textit{machinic subjectivities}.” Their analysis of games as the exemplar of Empire emphasizes the influencing power of the game to “train[] flexible personalities for flexible jobs, shape[] subjects for militarized markets, and make[] becoming a neoliberal subject fun.”\textsuperscript{156} In this sense, the game lends the player a sense of agency by occluding its contribution to the assemblage. However, the results of the gamic assemblage on players’ subjectivities is influenced by the many intervening factors that comprise the assemblage itself. While game designers structure gameplay in order to entice the player into a flow state of rapid consumption, they cannot account for the entirety of the gamic situation. From the failure of hardware to the material environment in which the game is played to the player’s mood and approach, there are many ways in which the flow can and often is disrupted. This analysis offers the potential of these moments of disrupted gameplay for revealing the assemblage.

\textsuperscript{156} De Peuter and Dyer-Witheford, \textit{Games of Empire}, xxix-xxx.
By formulating a taxonomy of the animal figures that appear in videogames, this chapter has emphasized the tensions that appear in any encounter with the nonhuman, including designed representations of them. Games tend to produce animals as ontologically equivalent to other objects, orienting the player toward them as a standing reserve or as a function. These functions are then masked by the semantic layer, which arouse paradoxical responses. Just as the player instrumentalizes these animals, the player’s desire to connect meaningfully with the nonhuman triggers affective responses. Even as these responses highlight the paternalistic approach toward animals, they suggest the paradox of a desire to both care for and use the nonhuman. Much like the fantasy of a pure nature and the desire to meaningfully commune with it, the fantasy of uncomplicated relations with animals organizes gameplay.
CONCLUSION: THE PIXELATED FRONTIER

Over the course of this thesis, I have sought to describe the pixelated frontiers that appear on our screens. These wide-open spaces are beautiful, attractive, and ours for the taking. They emulate that warm, fuzzy feeling that we get by imagining a “greener” future or by proudly identifying as “environmentalists.” These forays into the rolling hills of the gamespace drip with sentimentalism. Because of this, these spaces demonstrate our feelings about what the spaces around us fail to be. Our world is filled with other inhabitants who may disrupt our sense of individual peace or may even ask something of us, request our help or responsibility; in our world, there are no more oases, no “pristine places,” no new frontiers; our world is complicated, unpredictable, and often fails to align with our models of it; our world has a history, and it retains that history in the long-term effects of our refuse. Games present all the things that our world lacks and offer us the paradox of an untamed wilderness that is simultaneously constrained by a thousand rules. Pixelated frontiers become the ultimate frontiers because they can give us the imagined aesthetic experience of exploration without any of its ramifications. These frontiers indulge in a colonialist fantasy that imagines the practices of exploration and environmental mastery without any of consequences, such as holocausts enacted on indigenous populations, the destruction of cultural and social ways of being, and ecological devastation. Games envision the frontier as it has been idealized in literature and landscape art but extend the experience into the world of enaction and play. They allow players to live out fantasies predicated on an imagined experience of the world that never truly occurred, a benevolent conquering of green vistas; these spaces allow players to enact a mourning for a false history. In these ways, games give us a pulse...
on the desires of the contemporary consumer subject. They speak to the longing to have a meaningful connection with nature while also reifying nature as such.
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