DARWIN'S DAIKAIJU: REPRESENTATIONS OF DINOSAURS IN 20TH CENTURY CINEMA

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ABSTRACT

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The archetypal dragon, a composite of different living animals, has been popular for centuries, and we still tell stories about it today. One other monster seems to match the dragon in popularity, though it is not among the ranks of the traditional or legendary. Since their discovery in the late 18th century, dinosaurs have been wildly popular in both science and mass culture. The scientific status of dinosaurs as animals has not prevented people from viewing them as monsters, and in some cases, treating these prehistoric reptiles like dragons. This thesis investigates the relationship between the dragon and the dinosaur and the interplay between dragon iconography and dinosaur imagery in five dinosaur monster films from the mid-20th century: *The Beast from 20,000 Fathoms* (1953), *Gojira* (1954), *Godzilla Raids Again* (1955), *Gorgo* (1961), and *Ghidorah, the Three-Headed Monster* (1964). In addressing the arguments other critics have made against equating the dragon with the dinosaur, I will show that the two monstrous categories are treated as similar entities in specific instances, such as in monster-slaying narratives. The five films analyzed in this thesis are monster-slaying narratives that use the dinosaur in place of the dragon, thus "draconifying" the dinosaur. The dinosaur, as symbol of prehistory and evolution, renders the monster-slaying narrative concerned with evolutionary theory and humanity's place in nature, with each film interacting with culturally specific ideologies related to Darwin's theory of evolution. I show how there are two different types of dino-monster narrative that use the dinosaur either as an evil dragon that must be destroyed or as a dragon that can save humanity from internal or external threats. This thesis concludes with an examination of the ideology that surrounds the dragon-slaying myth, ideas about human-animal

relations, and an analysis of recent monster movies that continue the discourse involving evolutionary theory.

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INTRODUCTION

We are not afraid of predators, we're transfixed by them, prone to weave stories and fables and chatter endlessly about them, because fascination creates preparedness, and preparedness, survival. In a deeply tribal way, we love our monsters

E.O. Wilson, "In Praise of Sharks"

Monster stories have entertained every generation of humans, appearing in everything from the first recorded piece of fiction (*The Epic of Gilgamesh*) to the latest video games and movies. In this thesis, I focus on a legendary monster, the dragon, and its modern analogue, the dinosaur, as they manifest in *kaiju* film. The Japanese word *kaiju* translates to "strange beast," with the prefix *dai* meaning "great" or "giant," thus rendering *daikaiju* as "great strange beast." The English term "giant monster" is loosely synonymous with *kaiju*. The most prominent and best-known *kaiju* are King Kong and Godzilla, titans originating from the United States and Japan respectively. These giants came about during the last century, in cinematic form, with the advent of special effects techniques such as stop motion and suitmation (the use of people in monster suits). However, while *kaiju* seem to be quite recent developments, their origins are much older. *Kaiju* scholar Jason Barr mentions in his *The Kaiju Film: A Critical Study of Cinema's Biggest Monsters* that the basic idea of a *kaiju* "[stretches] even further back, well beyond the realms of cinema" (6). For Barr, the Icelandic Kraken, Norse giants, *Beowulf*'s Grendel, and the Biblical Leviathan are all precursors to what we understand today as *kaiju*: "the gigantic creatures that can crush cities under their feet, [are] only a modern twist on a very, very old series of tales. In other words….*kaiju* are merely the contemporary totem of *kaiju* lore" (6).

Other researchers and academics have recognized the literary and mythological origins of giant monsters. Literary scholar David H. Stymeist outlines in "Myth and the Monster Cinema" how "the cinematic monster is a mythic being of modernity" (403) with connections to other monsters from the past. Stymeist also asserts monster cinema possesses the structural binaries produced by structuralist interpretations of myth (396). If *kaiju* films can be interpreted in a similar fashion to myths, there is value in researching what some may consider a "lowbrow" genre.

A common mythological monster, the dragon is often conflated with *kaiju*, and a handful of scholars disagree with this move. Medieval scholar Joyce Tally Lionarons poses a question that she was given at her dissertation defense: "What is a dragon anyway? Why is one different from, say, Godzilla?" (vii). Although this is the only mention of Godzilla in her analysis, this question inspired her to define the dragon against Godzilla, as though a hierarchy of monsters existed. If there is such a hierarchy, then Lionarons' addition of the question in her research suggests that the dragon is of a higher order than Godzilla, thus deserving of scholarly attention. Another example comes from art philosopher Noël Carroll, who is interested in the evolutionary themes in *King Kong* (Meriam Cooper, 1933). When discussing the film's sources, Carroll momentarily suggests that it is "[required] to go back to the earliest tales of heroes and dragons" (119). But Carroll's suggestion is a trick, "[f]or though *Kong* is packed with dinosaurs and dinosaurs appear to be our best cue for identifying the subgenre that *Kong* inhabits, *Kong* is not even peripherally a dragon story. The reason is simple: dinosaurs do not belong to the same symbolic species as dragons" ("Ape and Essence" 119).[1] For Carroll, *Kong* and the dinosaurs

[1] Throughout this thesis, I use the terms "dinosaur" and "the dinosaur" to refer to any prehistoric reptiles. I am fully aware that dinosaurs are a distinct clade of prehistoric reptile and not all prehistoric reptiles are dinosaurs. Animals such as pterosaurs, plesiosaurs, dimetrodons, etc. are not dinosaurs in scientific taxonomy, but popular culture often conflates them with dinosaurs. An example of this conflation occurs in King Kong, as many of the "dinosaurs" encountered are large prehistoric reptiles (like a pterodactyl or plesiosaur) that were contemporaries of, but unrelated

that inhabit Skull Island cannot be related to dragon tales and dragons themselves because they symbolize different concepts, with dinosaurs ultimately symbolizing prehistory and evolutionary themes (120). While Lionarons does not provide an answer to what separates dragons from Godzilla, according to Carroll's logic, Godzilla is not in the same symbolic species because he is a dinosaur.

Despite these pronouncements of the separation between dragon and dinosaur, a variety of other writers have treated dragons and dinosaurs interchangeably. Literary scholar Joseph D. Andriano's research on monsters argues that a handful of 20th-century monster narratives – *kaiju* included – utilize the dragon and empower it with the evolutionary symbolism that the dinosaur possesses. The symbolic connection between dragon, dinosaur, and *kaiju* exists in some capacity, regardless of their precise respective qualities.

The purpose of this thesis is to explore the symbolic connection between dragons, dinosaurs, and *kaiju*. Specifically, I concern myself with *kaiju* that take on both dinosaurian and draconic traits and combine the figures into one entity. I argue that *kaiju* cinema's presentation of dinosaur imagery and iconography updates traditional dragon lore to produce contemporary dragon-slaying texts. Hybrid dragon-dino-monster texts operate as glaring counterexamples to Carroll's assertion that dinosaurs and dragons symbolize differing concepts. The hybrid texts I analyze are *The Beast from 20,000 Fathoms* (Eugène Lourié, 1953), *Gojira* (Ishiro Honda, 1954*), Godzilla Raids Again* (Motoyoshi Oda, 1955), *Gorgo* (Eugène Lourié, 1961), and *Ghidorah, The Three-Headed Monster* (Ishiro Honda, 1964). [2] These texts fuse the dinosaur with the dragon and

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to, dinosaurs. For ease of discussion, I will use "the dinosaur" to refer to any prehistoric reptile, regardless of actual taxonomic placement.

[2] In most scholarship and popular writing on the first Godzilla film, the movie is often called *Godzilla*, the accurate English pronunciation and transliteration of the Japanese katakana (ゴジラ) for the monster (Ryfle and Godziszewski 89). In this thesis, I chose to refer to the first film as *Gojira*, another variation on the transliteration of

produce what can be called, in Andriano's phraseology, a "naturalized dragon," or a dragon that is no longer supernatural, but part of the natural world, an organism with an evolutionary past ("Monsters of the Fantastic" 279). I will show in my analysis how fusing the dragon and dinosaur into one entity allows viewers to approach culturally specific anxieties about evolution and the philosophical challenges that evolutionary theory brought to both American culture and Japanese culture respectively. More often than not, these dragon-dinosaur hybrid texts allow viewers a cathartic release as they allow viewers to accept evolution, but at the same time, deny connections to animals, which are a major philosophical challenge to both dominant American and Japanese ideologies. My thesis is an eco-critical argument, and I am interested in how cultures recycle specific narratives to separate the cultural and the natural, the human from the animal.

Existing Scholarship on Monsters, *Kaiju*, and Dinosaurs

In "Monster Culture (Seven Theses)" published in *Monster Theory: Reading Culture* Jeffrey Jerome Cohen presents seven theses that provide "a method of reading cultures from the monsters they engender" (3). The seven theses have pervaded monster studies as it provides a pertinent set of principles that monster texts generally follow (even monsters are not without their outliers). A particularly salient point that Cohen makes about monsters is how they "dwell at the gates of difference" because they "function as [a] dialectical Other" (7). The monster's body is composed of what a culture deems Other or different, such as culture, politics, race, economics, or sexuality (Cohen 7). Monsters police what a culture finds acceptable and unacceptable, allowing a cathartic release once they are slain, but at the same time, allowing audiences to interact with what is considered taboo.

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the katakana, because of the three other films released after the original (1984, 1998, and 2014) that bear the title *Godzilla*.

Kaiju studies is currently developing as a branch of monster studies, with a handful articles, books, and collections of essays being published each year. *Japan's Green Monsters: Environmental Commentary in Kaiju Cinema* Sean Rhoads and Brooke McCorkle is a collection of essays exploring various environmental themes within the *kaiju* genre. The genre has long tackled environmental issues, with *Gojira* addresses the effects of atomic bomb tests and many, many Mothra films making pleas for ecological awareness. While this thesis fits within the tradition of ecocriticism like *Japan's Green Monsters*, I will examine human-animal relationships as opposed to human-environment relationships that Japan's Green Monsters analyzes. The scholarship within *Japan's Green Monsters* bends more towards eco-Marxist criticism, focusing on the environmental messages within the film and the films as cultural artifacts relating to business and profit (Rhoads and McCorkle 3). While I do not take on the eco-Marxist perspective that Rhoads and McCorkle use, I do agree with the assertion that "monsters and [monster films] embody ecological messages" and that kaiju films are not "frivolous kitsch…[but] contain a kernel of the serious and can be interpreted as important sources of environmental, social, and political critiques" (Rhoads and McCorkle 3).

Dinosaurs figure prominently in this thesis, and the amount of non-scientific literature on dinosaurs, especially in literary and cultural studies, is quite large. A handful of examples include "Imagining Dinosaurs" by Susan Willis, "Dinosaur Doctors and Jurassic Geniuses: The Changing Image of the Scientists in the Lost World Adventure" by Gary Hoppenstand, and "The Defining Dinosaur: The Role of Scientific Value Concepts in Paleontological Popularizations" by Kelley Kelleway. Willis' central argument centers on the why dinosaurs appeal to children and its ubiquity in American culture. Her ultimate conclusion is that "[b]ecause dinosaurs can be almost anything, both in science and in culture they lend themselves to the child's imagination,

which shuffles and re-sorts all available bits of knowledge…This may replicate dominate ideologies….or may just easily transform these meanings to give utopian content to dinosaur play and drawings" (Willis 195). Willis' conclusion on the malleability of the dinosaur as a cultural artifact is pertinent to this thesis as it supports an interpretation of the dinosaur as a monster, not only as an object of scientific study but as an entity existing within human imaginative culture.

Gary Hoppenstand's article inspects the changing role of scientists in the "lost world" genre of dinosaur fiction. He does so by comparing Professor Challenger from *The Lost World* by Sir Arthur Conan Doyle and Ian Malcolm from *Jurassic Park* by Michael Crichton. What separates the two scientists is a shift in opinion about science – from Doyle's admiration to Crichton's fear – brought about by the advent of the atomic bomb (Hoppenstand 13-14). Arguably, Hoppenstand's conclusion could apply to popular representations of scientists at large, but such a generalized claim would require a larger data set than two novels in a relatively small genre. Kelley Kelleway also concerns herself with the role of science and scientists in "The Defining Dinosaur." Instead of the fictional scientist, Kelleway investigates how scientists dictate what objects of are scientific value and concludes that dinosaur researchers are in a particular position of power because of the scientific and cultural value given towards their prehistoric objects of study (54). Both of researchers are concerned with the representation and presence of science and scientists in dinosaur texts and culture as a whole. However, they diverge in their goals. While Hoppenstand is interested in what scientists signify in the lost world narratives, Kelleway focuses on how scientists encode scientific and cultural value into the objects that they study. Science and scientists play a crucial role in understanding the dinosaur as a cultural artifact and the narratives told about both dinosaurs and science. Much in the way that

dragon narratives utilized heroes and religious themes, much like St. George, Hoppenstand and Kelleway elucidate ways in which science and scientists are utilized in narratives about the dinosaur.

Analytical Approach and Methodology

The approach used to analyze the data collected from the films in this study is semiotic because in this thesis I am interested in knowing what the dinosaur monster signifies. My approach includes semiotic interpretations of the monster's aesthetics, human characters, and the rhetoric the human characters use to discuss the monster. A semiotic approach is perhaps one of the best to use when analyzing monsters; as anthropologist David Gilmore notes, the "monster" is etymologically related to words associated with symbolizing and signaling (9). According to Gilmore, "from the beginnings of recorded time, monsters have been part of a semiotic culture of divination, metaphors, messages, [serving indicators] of deeper meaning, or inspiration" (9).

Since these films are, as I argue, modern renditions of dragon myths, the monsters take on the binary oppositions that Stymeist claims monster cinema produces from myth. Consequently, the monsters signify specific parts of a given binary. While my utilization of semiotics stems from Andriano's, he does not elaborate on what variation of semiotics he uses. The semiotic process I shall use therefore comes from medieval scholar Jonathan Evans' "Semiotics and Traditional Lore: The Medieval Dragon Tradition," in which he argues that the dragon-fight narrative from Medieval lore creates the binary opposition between the hero and dragon by developing specific semantic spaces in which the hero and the dragon are defined. In addition to Evans' semiotic approach, which is primarily concerned with the linguistic and literary representation of the dragon, I shall also use another analytical tool developed by W.J.T. Mitchell that allows for the decoding of visual media. Mitchell's concept of the "imagetext," an

object that is "a combination of verbal and visual signs" (52) allows a researcher to interpret the layers of signification that exist not just in what is said or written about an object (in this case, a dragon or dinosaur), but also understand the signification behind the visual presentation of an object.

My methodology is based on close readings of the themes prevalent in each individual movie, paying close attention to the interaction between nature and culture in regards to constructing dragons and dinosaur monsters. Elements pertinent for analysis in regards to monster construction will be the monster's morphology, behavior, origins, and the kinds of narratives in which they appear; these elements are important when comparing the dragon and the dinosaur and delineating their similarities and differences. I will also consider how the human characters are defined in the films, and like the dragon and dinosaur, the human characters in the analyzed kaiju films will be compared to the heroes from dragon narratives. As mentioned previously, this analysis is concerned with how humans distance and separate themselves from the dragon/dinosaur/dinosaur monster now that evolutionary theory has challenged traditional notions of human-animal relationships.

Outline of the Thesis

This thesis will contain five chapters: an introduction, four numbered chapters, and a conclusion. Chapter One, "Draco Rex: Dragons and Dinosaurs in Narrative and Symbolic Spaces," responds to claims that dinosaurs and dragons are not narratively or symbolically related. Separating dragons from dinosaurs, and the monsters derived from their amalgamation, creates a hierarchy of monstrosity, a problematic move that diminishes the importance of monsters that may be just as effective, if not more so, than others. In this chapter, I will use Carroll's own analytical toolset to outline how dinosaurs and dragons have been used

interchangeably in a variety of texts, and in other texts, melded into one entity. One of Carroll's analytical tools is of his own creation, the symbolic biologies of monsters, used to understand why monsters make viewers uncomfortable. These biologies come in various forms, such as fusion, fission, magnification, and massification (*Philosophy of Horror* 42-52). The biology important here is fusion, which is a monster that is a combination of two or more distinct categories, such as dead/alive or snake/human (*Philosophy of Horror* 43). Carroll claims in "Ape and Essence" that dragons are fusion figures while dinosaurs are not ("Ape and Essence" 119-120). I tackle this claim by showing how dinosaurs *are* fusion figures, and that the very nature of a fusion figure relies on conceptual similarities between the dragon and the dinosaur. Both Carroll and W.T.J. Mitchell argue that dragons and dinosaurs are featured in different types of narratives. However, both scholars focus on very specific types of dinosaur narratives and exclude other types. Dinosaurs and dragons often show up in very similar stories. Finally, Carroll and Mitchell claim that, because of narrative differences, dinosaur and dragons symbolize different concepts, but like the fusion biology and narrative appearances, dinosaurs and dragons often share similar symbolic and metaphorical meanings.

After the link between the dinosaur and dragon has been established, Chapter Two, "Nature's Dragon: Dino-Monsters and the Aesthetics of Darwinian Dragons," will look at how two seminal dinosaur monster movies – *The Beast from 20,000 Fathoms* and *Gojira* – cast the dinosaur in the role of the dragon. Depending on one's perspective, the films either naturalize the dragon or "draconify" the dinosaur. Either way, I focus on the aesthetic choices made that update the dragon and the dragon-slaying hero for mid-20th-century audiences.

Chapter Three, "Dragon of the Apocalypse: Dino-Monsters and Progressive Evolution," continues the analysis from the previous chapter. I explore the themes within three dinosaur

monster films: *The Beast from 20,000 Fathoms*, *Gojira*, and *Godzilla Raids Again*. These films all, in some capacity, update elements from the traditional dragon narrative and the combative dragon-motif and encode them with evolutionary meaning. This encoding of evolutionary themes and meanings render these movies stories about dealing with and slaying the anxieties caused by evolutionary theory. Special attention will be paid to the tensions and anxieties that existed in both the United States and Japan in response to Darwin's theory of evolution and how each film addresses these anxieties. In addressing these anxieties, the films promote a form of Social Darwinism and progressive evolution (the idea that evolution is a march to progress and perfection) that dictate that humans have superiority over nature. This is done by accepting that each respective country has an evolutionary past and that even humans may have an evolutionary past, but there still exists a hierarchy of life, with humans at the top.

If the first sequence of films is about humans slaying the dinosaur in an attempt to show dominance over nature despite evolutionary theory, the films analyzed in Chapter Four, "The Dragon of Eden: Dino-Hero and the Tree of Life," reverse that narrative trope. *Gorgo* and *Ghidorah, the Three-Headed Monster* question the Ladder of Being and progressive evolution by positioning the dinosaur as the hero of the narrative. These films do so by, once again, updating dragon iconography with dinosaur imagery, but also do something different. These films are intertextual in the sense that they interact with core dragon narratives from their respective cultures – the story of St. George and *Beowulf* for Gorgo and the tale of Yamata no Orochi for *Ghidorah, the Three-Headed Monster*. In doing so, these films spurn notions of Social Darwinism and progressive evolution for a more inclusive model of evolution, which unites not just humans as a singular race, but also, humans with nature.

The conclusion of this thesis will take a brief look at a select few movies made since 1964, some of which are wholly dragon, wholly dinosaur, or *kaiju* texts. I will discuss the relationship between the films analyzed previously and the films briefly discussed in relation to ideology, and in particular, ideology surrounding evolutionary theory and human-animal relations. Additionally, I briefly discuss a handful of recent dinosaur and monster films that recycle dragon imagery and tackle evolutionary issues, showing that American and Japanese cultures are still concerned with evolutionary theory and its implications.

CHAPTER I. DRACO-REX[3]: DRAGONS AND DINOSARUS IN NARRATIVE AND SYMBOLIC SPACES

It's very simple why kids are crazy about dinosaurs -- dinosaurs are nature's Special Effects. They are the only real dragons. Kids love dragons. It's not just being weirdly shaped and being able to eat Buicks. It's that they are real.

Robert T. Bakker, *Honolulu Advertiser,* Jul. 9, 2000

Allen A. Debus uses the term "dino-monster" in his works on dinosaurs in art and popular culture. While he does not define the term, the concept of a dino-monster is intuitive: a dinosaur rendered monstrous through various methods, such as giving it monstrous features or behavior, or by placing it in a narrative space traditionally occupied by monsters. In the narratives where the dinosaur acts as a monster, it takes on the role and traits of the dragon. In the chapter that follows, I focus on how narratives use dinosaurs and dragons in similar ways. This is to show that the dinosaur, dragon, and dino-monster are, in some capacities, interchangeable. However, a handful of scholars object to this stance. In particular, I will focus on an argument provided by art philosopher and film scholar Noël Carroll which states that dragons and dinosaurs are only superficially similar, their visual representations and narrative roles are in fact completely different. Another argument against the symbolic equivalence of dragons and dinosaurs comes from W.T.J. Mitchell's *The Last Dinosaur Book*, in which the art historian and cultural studies scholar parses out the differences between dragons and dinosaurs

[3] A reference to the actual dinosaur named *Dracorex hogwartsia*, or the "Dragon King of Hogwarts." Despite the dinosaur's dramatic name, many dinosaur paleontologists consider it a dubious genus as it is most likely a juvenile form of *Pachycephalosaurus*.

on both narrative and symbolic levels. I address these arguments in turn, showing that both Japanese and American cultures have conceptualized dragons and dinosaurs as similar entities, and utilize the two in similar narrative and symbolic roles.

Symbolic Biologies and Prototype Theory

Noël Carroll's denunciation of the dragon-dinosaur link comes from a 1984 article titled "*King Kong*: Ape and Essence," in which he delineates various Darwinian metaphors that render the text a Social Darwinist narrative. He outright denies Kong is a dragon story by stating that "dinosaurs do not belong to the same symbolic species as dragons" ("Ape and Essence" 119). They are not, as he calls them, "fusion figures" ("Ape and Essence" 119-120). Dragons represent a fusion of different symbols, "condensing earth, air, fire, and water" and also possess "compounding biological parts of different genera" (Carroll 120). Carroll uses the film *Dragonslayer* (Matthew Robbins, 1981) as a more contemporary example of this because "its dragon walks, crawls, and lives underground (earth), it flies (sky), belches flame (fire) and sleeps underwater" (120). Dinosaurs do not possess this symbolic nature because they do not possess a composite biology like dragons, and they are symbols of prehistory instead of elemental forces ("Ape and Essence" 120).

This segregation of dinosaurs and dragons as two different "symbolic species" is problematic, however. To Carroll, the separation between the two entities is peripheral to his argument, devoting only two paragraphs attempting to debunk the connection between the dinosaur and the dragon. The claim and his brief justification for the segregation works in his argument's favor, but the claim itself is ultimately empirical, and he provides little evidence for what is a large assertion. In fact, despite Carroll's insistence that dragons and dinosaurs are dissimilar, existing as different categories or concepts, the difference has not prevented culture at

large from equating the two entities. As far back at the early 19th century, during the dawn of dinosaur paleontology, dragons and dinosaurs were conflated. For example, *The Book of the Great Sea-Dragons, Ichthyosauri and Plesiosauri* (1840) by Rev. Thomas Hawkins identifies two families of prehistoric marine reptiles, the Ichthyosauria and the Plesiosauria, as biblical sea dragons[4]. Hawkins' insistence that prehistoric reptiles were dragons possibly inspired other artists. The illustration at the beginning of Hawkins' book, rendered by artist John Martin, presents a dark ocean with massive ichthyosaurs and plesiosaurs battling. Contrasting light and darkness, Martin creates a stark and dramatic world for these gigantic reptiles. If one were to compare Martin's *Great Sea-Dragons* to Gustave Doré's *The Destruction of Leviathan* (1866), one will find many similarities: the struggling reptilian bodies, the contrast between light and darkness, and the aquatic setting. While there is no definite evidence of Martin's paleoart influencing Doré's biblical art -- the two artist's careers overlap briefly in the 1850s -- the likeness the prehistoric reptiles and the Leviathan share in these two illustrations suggests people in the 19th century conceptualized dinosaurs and dragons as similar entities.

The Romantic conflations of dinosaurs and dragons decreased by the mid-19th century, but did not go extinct. Charles Gould, an English geologist, entertained the notion that dragons had evolved at one point in history, citing the dinosaur as a dragon-like creature naturally

[4] By the 18th century, Western scientists and thinkers dismissed the dragon's existence outright (Senter et al 86). Interestingly, the scientific dismissal of the dragon and the discovery of dinosaurs and other prehistoric animals overlap. In 1677, British scientist Robert Plot discovered a portion of a large thighbone and concluded it must have been from an elephant that the Romans brought to England during their occupation of the British Isles; today, paleontologists have identified the bone as part of a *Megalosaurus* (Norman 51-52). The French Republican Army discovered the marine reptile *Mosasaurus* in 1795 during a sack of a village, and researchers at the time understood it was a gigantic, seafaring reptile (Norman 53). In 1824, geologist Rev. William Buckland published his description of *Megalosaurus*, and geologist Gideon Mantell named the *Iguanodon* in 1825 (Norman 54). Zoologist Richard Owen defined the clade Dinosauria ("terrible reptiles") which included the *Megalosaurus* and *Iguanodon* (Norman 54). Between the early discovery of fossils and Owen's work on Dinosauria, dinosaurs and prehistoric reptiles were associated with fantastic beings, such as Hawkins' sea-dragon assertion. See *In the Wake of the Sea-Serpents* by zoologist Bernard Heuvelmans for an extended analysis of how early scientists viewed the nature of prehistoric reptiles and the existence of sea serpents.

evolving as historical evidence (Debus 20). Eminent paleoartist Benjamin Waterhouse Hawkins, known for his dinosaur sculptures at the British Crystal Palace, considered Gould's conclusion an absurdity, "concluding that the creatures most closely resembling dragons were the extinct winged pterosaurs" (Debus 20). Contemporary paleontological works also continue the dragon-dinosaur identification theme: *Feathered Dragons: Studies on the Transition from Dinosaurs to Birds, Dinosaurs*, *Spitfires, and Sea Dragons,* and *Sea Dragons: Predators of the Prehistoric Oceans*. In mass culture, the dragon-dinosaur identification is quite popular, especially in video games. For example, the role-playing franchise *Monster Hunter* sports a plethora of monster species that resemble dinosaurs identified as dragons or wyverns. Despite Carroll's insistence that dragons and dinosaurs are different, culture at large has continued to treat them similarly. To elucidate why dragons and dinosaurs are connected, we must break down the categories of "dragon" and "dinosaur." The connection becomes apparent when one utilizes Carroll's interpretative concept, symbolic biology, to analyze the similarities and differences between dinosaurs and dragons. In fact, in doing so, the separation between the dinosaur and the dragon almost entirely collapses given very specific contexts, thus rendering them as subspecies in a largely symbolic species.

Carroll is utilizing his concept of symbolic biology, a theory he expands upon in *The Philosophy of Horror, or Paradoxes of the Heart*, the philosopher's attempt to devise a succinct theory of horror.[5] Within, Carroll outlines his hypothesis of what makes a monster effective in instilling feelings of fear or horror, which he dubs symbolic biologies. The symbolic biology of a monster is often fantastic and can take on a variety of different forms. The symbolic biologies

[5] In *The Philosophy of Horror*, symbolic biology is discussed under the section "Fantastic Biologies and the Structures of Horrific Imagery" (42). The term "symbolic biology" comes from an earlier article, "Nightmare and the Horror Film: The Symbolic Biology of Fantastic Beings."

are a guiding principle behind the creation of threatening and impure monsters (*Philosophy of Horror* 43). The biology of interest here is what Caroll terms "fusion" because dragons are fusion figures according to Carroll.[6] As defined in *Philosophy of Horror*, a fusion is "the construction of creatures that transgress categorical distinctions such as inside/outside, living/dead, insect/humans, flesh/machine, and so on…a composite that unites attributes held to be categorically distinct and/or at odds with the cultural scheme of things an *unambiguously* one, spatio-temporally discrete entity" (*Philosophy of Horror* 43). However, Carroll does not provide a clear definition of the dragon category, instead just mentioning that dragons combine different categories, both symbolically and physically.

A clear definition of the dragon category is pertinent to any analysis that seeks to separate or combine the dragon and dinosaur. Carroll's analysis hints at a form of essentialism between the dragon and dinosaur categories. In response to Carroll's seeming essentialism, I do not call upon nominalism to define the dragon and dinosaur. Complete nominalism, supported by paleontologists and popular culture equating the dragon and dinosaur, does not help in understanding their respective categories. Instead, I argue that the dragon and dinosaur are *equivalent* using a combination of psychologist Eleanor Rosch's prototype theory and philosopher Ludwig Wittgenstein's concept of family resemblances. Such a combination originates from anthropologist Benson Saler and Charles A. Ziegler's "Dracula and Carmilla: Monsters and the Mind" (2005), in which they seek to understand what renders Dracula a more prototypical vampire over Carmilla, the former's literary predecessor. According to Rosch, prototypes for a category are "the clearest case of category membership defined operationally by

[6] The other types of symbolic biologies Carroll formulates include fission (splits two categories across time and space, e.g., a werewolf), magnification (making a category larger, e.g., the giant rabbits from *Night of the Lepus*), massification (multiplying entities from a category, e.g., the hordes of giant rabbits from *Night of the Lepus*), and horrific metonymy (the presence of threatening and disgusting stimuli in the monster's environment). Symbolic biologies are not mutually exclusive and can be used in tandem with each other. (*Philosophy of Horror* 42-52).

people's judgments of goodness of membership in the category" (36). For examples, clearer prototypes for furniture may be a chair or table compared to a divan. Prototype theory "celebrates centrality and periphery rather than essence and boundaries in conceptualizing categories" (Saler and Ziegler 219).

The dragon must possess specific traits to be a category with family resemblances that Carroll suspected separated it from the dinosaur. Family resemblances are a combination of overlapping traits that exists in a category, "a complicated network of similarities overlapping and criss-crossing: sometimes overall similarities, sometimes similarities of detail" (Wittgenstein 32). The dragon, as a category, must possess specific traits across a variety of different examples to exist, traits that would be pertinent in defining what could be a prototypical dragon. At its simplest, dragons are either snakes or another reptile, such as a crocodile or monitor lizard. In Western lore, the dragon started out as a large snake, as the ancient Greek *drakon* shows (Senter et al. 69). Zoologist Phil Senter, physiologist Eid E. Haddad, and translator Uta Mattox analyzed a host of classical and medieval texts detailing the dragon in "Snake to Monster: Conrad Gessner's *Schlangenbuch* and the Evolution of the Dragon in the Literature of Natural History." According to their research, in its earliest form, the Greek *drakon* most likely referred to the Aesculapian snake, a non-venomous snake native to Europe (Senter et al. 72). In Japanese myths, the earliest known dragon, Yamata no Orochi, is portrayed as a massive, polycephalous snake. Other dragons that appear in the earliest Japanese texts, the *Kojiki* and the *Nihongi* (also known as the *Nihon Shoki*, both dating back to the early 8th century), are either clearly large snakes or another type of reptile. For example, the *wani* featured in the "Hare of Inaba" episode in the *Kojiki* is a crocodylomorphic dragon; the word *wani* is often translated as crocodile or alligator

(Philippi 406-407). There is also the *mizuchi*, which appears in the *Nihongi*, and Aston notes how this word descends from a Chinese character translated as "water-snake" (299).

The reptilian aspect of the dragon is just one aspect of its category, however. In his *Motif-Index of Folk-Literature*, folklorist Stith Thompson provides this a definition of the dragon category: "a serpent or crocodile, with the scales of a fish for covering, the feet and wings and sometimes the head, of an eagle, falcon, or hawk, and the forelimbs and sometimes the head of a lion" (349). Evans' description of the dragon's morphology is similar: "The dragon's body is generally very large, serpentine, equipped with lashing tail, sharp talons, [and] a gaping mouth with sharp teeth" (95). The combination of reptilian, avian, and felid influences is popular in Western artwork. The rendition of the dragon in the *Aberdeen Bestiary*, a 12th century illuminated manuscript, follows this morphological template. It possesses a serpentine neck and tail, with a central body similar to that of a bird, and wings of a bird. However, its head looks mammalian – which mammal it is supposed to be is hard to determine. Its paws also suggest either mammalian or avian heritage, as well. Moving forward in time, Paolo Uccello's painting *Saint George and the Dragon* from c. 1470 features a dragon with a reptilian body, bat-like wings, avian-inspired feet, and a mammalian head. A Google image search of "St. George and the Dragon" will turn up a plethora of similar dragon morphologies.

In the West, it seems that the dragon possesses this fusion nature of reptile/felid/avian; this raises the question of whether dragons in other cultures possess similar features. While that question would probably require another thesis, let us narrow down to the other culture pertinent to this thesis: Japan. Dragons were often portrayed in *ukiyo-e*, a genre of art that flourished from the 17th to 19th centuries. Take, for example, Kuniyoshi Utagawa's *Princess Tamatori at the Palace of the Dragon King* from 1853. This painting depicts the Tamatori's flight from the

Dragon King's (Ryujin) palace with a precious tide jewel. Ryujin is depicted with the characteristic serpentine body of a Japanese dragon with its expressive mammalian face and taloned feet.[7] Utagawa's rendition of Ryujin presents the dragon king as a fusion figure different from Western representations of dragons, but despite that still possessing the predator parts from reptiles, felids, and avians. As a category, for both Europe and Japan, the prototypical dragon possesses a fusion biology consisting of reptilian, avian, and felid influences.[8]

Dragons are visual fusion figures unified under a single term, while dinosaurs, on the other hand, are fusion figures on both visual and linguistic levels. Before a person even sees a dinosaur, through either artistic representations or a mounted skeleton, she hears the name of the dinosaur. The names dinosaurs are given is the first area where categorical blurring occurs. For example, dinosaur names, a topic quite popular with children, happen to be an area of categorical overlap. There is something appealing about the names *Carnotaurus*, *Brontosaurus*, or *Diabloceratops*. Without even knowing the exact translations of each name, they feel powerful and dramatic. In "Medieval Dragons and Dinosaur Films," literary critic Michael Delahoyde recognizes this as well, asserting that dinosaur names are often "more dramatic than descriptive" (20). "Meat-eating bull," "Thunder lizard," and "Devil-horned faced" – the three aforementioned names translated – are certainly dramatic, and once translated, reflect the fusion nature of dinosaur naming conventions. These dinosaurs (and many, many more) sometimes possess

[7] Kuniyoshi Utagawa produced different versions of this story. Another one features a Ryujin with a snake-like head, for example.

[8] Stith Thompson acknowledges that Chinese dragons are fusion figures with the "ears of an ox, feet of a tiger, claws of an eagle, horns of a deer, head of a camel, eyes of a devil, neck of a snake, abdomen of a cock, [and] scales of a carp" (349). Thompson also describes the Japanese dragon as a "modified serpent" (349). Traditional Japanese art, like *ukiyo-e*, portrays dragons with the features of the Chinese dragon (Mueller 113). However, *ukiyo-e* accentuates certain traits of the dragon, such as its large mouth filled with teeth, its large claws, and its serpentine body, whose carp-like scales can easily be read as reptilian scales to the unknowing observer. Contemporary Japanese dragon representations vary, sometimes using snake-like designs (e.g. Orochi from the video game *Nioh*), more traditional Asian dragon designs (e.g., Shenron from the *Dragon Ball* manga), or Western-inspired designs (e.g., the dragons from the anime *Fairy Tail*).

features reminiscent of their names, such as the cranial horns on a *Carnotaurus*, but largely, dinosaur names imply a non-existent hybridity.

Visually experiencing a dinosaur, be it a skeleton or artistic representation, is where a person would find the resemblances between dragon and dinosaur most acute. For example, Delahoyde notices a curious similarity between the representations of dragons and dinosaurs: gigantic, toothy mouths, often the source of the monster's defeat (27). However, not all dinosaurs have these toothy mouths. Specific groups of dinosaurs, ones with these large mouths, are used as dragons more than other groups. Sociologist Albert Bergesen demonstrates this distinction when he muses how one might update a dragon for the 20th century:

> [H]ow would a culture go about bringing an ancient image into modern consciousness such that it retained many of its mythical attributes yet was something that could be readily grasped today? Or, how do you reincarnate the ancient archetype, the Dragon, into contemporary imagery? One way is to take a somewhat similar reptilian form – like dinosaurs and at that the most ferocious of all, Tyrannosaurus Rex [sic] – and make him the foundation for neo-Dragon imagery. (202).

The *Tyrannosaurus rex* is the prototypical bridge between the dragon and the dinosaur – many texts that feature a dino-monster use the tyrant lizard king as a design basis (for more information on this topic, see second chapter). The reason for this rests in the anatomical features of the *T. rex*, which is often described as a fusion of other animals. For example, in his 1915 description of the dinosaur, paleontologist Barnum Brown states, "Its anatomical features show distant relationship with lizards, crocodiles and birds" (qtd. in *Prehistoric Monsters* 176). The reptilian and avian anatomical features are common throughout a group of dinosaurs known as theropods, of which the aforementioned *Carnotaurus* and *T. rex* are a part.

Mammals are not absent in the dinosaur fusion matrix. For example, in *The Lost World* (1912), author Sir Arthur Conan Doyle describes a plethora of dinosaurs and other prehistoric lifeforms by drawing similarities between the organism's own anatomy and the anatomy of other organisms. At one point in the novel, narrator and protagonist Malone breaks away from the group while traversing upon an Amazonian plateau filled with prehistoric life. Out of the darkness emerges a *Megalosaurus*, a carnivorous theropod:

> A great dark shadow disengaged itself and hopped out into the clear moonlight. I say 'hopped' advisedly, for the beast moved like a kangaroo, springing along in an erect posture upon its powerful hind-legs, while its front ones were held bent in front of it. It was of enormous size and power, like an erect elephant, but its movements, in spite of its bulk, were exceedingly alert. For a moment, as I saw its shape, I hope it was an iguanodon…Instead of the gentle, deer-shaped head of the [iguanodon], this beast had a broad, squat, toad-like face…(Doyle 126).

Doyle goes on to describe how the *Megalosaurus* takes on a quadruped stance to track Malone's scent (126). While Doyle's description of the *Megalosaurus* does not include any direct felid references, the author compares the theropod (along with the iguanodon) to mammals more so than any other class of animal. Doyle's dinosaurs are a combination of not just predatory mammals, reptiles, and birds, but a combination of different genera, including toads, pachyderms, and marsupials. Interestingly, the earlier reconstructions of the *Megalosaurus* portray the dinosaur as a quadruped reptile reminiscent of big cats and other large mammals.

Early Japanese representations of dinosaurs also conceptualized the category as both a fusion figure and integrated aspects of the Japanese dragon into the prehistoric animal. *Research into Constructivism* (*Koseiha kenkyu*), a 1926 book by artist Tomoyoshi Murayama, bears the

image of a dinosaur on its cover. The dinosaur, drawn in a minimalist style, has the bird-like feet of a theropod dinosaur and large spikes on its back. Murayama's rendition of the dinosaur is interesting because of its elongated, serpentine body, making it extremely similar to the serpentine dragons of Japanese lore.

As a category, the dinosaur is understood as a fusion figure, as the naming habits of science and the descriptions provided by both the scientific elite and pop culture paint this clade of reptiles as a fusion of reptiles, birds, and large, often predatory, mammals. Even when authors describe dinosaurs with a different set of animal features, such as the deer-like head on the Iguanodon, there still exists a compulsion to relate and compare, and thus compose, dinosaurs out of other animals. To visualize the dinosaur properly, the dinosaur is rendered as a fusion entity with features similar to dragons.

Dragon and Dinosaur Narrative Structures

Noël Carroll not only draws the line between dragons and dinosaurs in morphological terms but also in terms of differences in narrative structure. The section that follows focuses on the similarities and differences in structure between dragon and dinosaur narratives, and how what Carroll perceives as absolute differences stems from his narrow selection of dinosaur fiction representatives. Specifically, Carroll's selection of monster fiction pulls from the "lost world" genre, which involves a group of explorers (either willing or unwilling) who venture through a prehistoric landscape and encounters factual and fictional prehistoric fauna. The dinosaur and its lost world setting are modern symbols, as they denote the modern scientific concept of prehistory, as opposed to the pre-modern concepts that dragons often signify ("Ape and Essence" 120).

Mitchell's segregation of the dragon and the dinosaur stems from a narrative level as well. The separation occurs not in the generic conventions of popular fiction, but instead, in the cultural mythology that surrounds the dinosaur in comparison to the dragon. Unlike Carroll, Mitchell has no problem linking the dragon and the dinosaur in a form of cultural genealogy: "Like the dinosaur, the dragon is a 'modified' reptile, endowed with wings or legs. Contemporary paleontology argues that birds are descendants of dinosaurs. From the standpoint of cultural history, it seems clear that the composite image of a reptilian bird or 'plumed serpent" is far older than the dinosaur" (89). The composite or fusion nature, of the dragon and the dinosaur is where the similarities end. On a symbolic level, dinosaurs are the totemic animals of modernity (77), while dragons were not the totemic animals in their medieval settings (88). The dragon, being a heraldic image in Europe since the Middle Ages and an imperial symbol in China, were not available to the public at large, a feature Mitchell ascribes to totemic animals (89). The cultural narratives and that surround the dinosaur are fundamentally different from the dragon, stemming from both the former's status as a symbol of modernity and as a scientific object. According to Mitchell, "[t]he dragon, especially in Western culture, is associated with evil that must be defeated and killed…The dinosaurologist is supposed to track down the dinosaur and bring it back to life with the power of science, so that it may be consumed in rituals of public display" (89). The resurrection and consumption of the dinosaur, essential features of the totemic animal, are important aspects of the modern mythology surrounding the dinosaur, but are not aspects present in dragon mythology or narratives.

Carroll and Mitchell focus on important aspects and roles both the dinosaur and dragon play in narrative fiction and culture. Despite the enlightening facets of their arguments, both are too narrow in their conclusions as they ignore other forms of narratives told about dinosaurs.

Carroll's analysis of the lost world genre and the themes within is astute, but he excludes narratives in which dinosaurs come to human lands, where the dinosaur attacks us as opposed to us encroaching into dinosaur lands. Similarly, Mitchell's focus on the science-resurrection of the dinosaur focuses too closely upon the act of displaying dinosaurs in public, such as skeletal mounts in museums, and as popular objects of scientific research. While the scientist may resurrect the dinosaur for cultural purposes, Mitchell ignores stories told in which the dinosaur functions as a dragon, as a symbol of evil, and the scientist must slay the dinosaur instead of resurrecting it. In short, both Carroll and Mitchell ignore the dinosaur narratives that are structurally similar to traditional dragon narratives.

The traditional dragon narratives that Carroll and Mitchell reference are dragon-combat stories in which a dragon threatens humanity and must be slain by a powerful hero. The traditional dragon narrative does vary across Western cultures, but such variations tend to be of degrees and not magnitudes. Medieval literary scholar Jonathan D. Evans notes in "Semiotics and Traditional Lore: The Medieval Dragon Tradition" how the European dragon-combat narrative is often composed of very specific semiotic and semantic features. Specifically,

> the hero, a *human*, generally travels from a social setting…into wilderness, where he meets a series of foes, including a dragon; he does battle with the dragon in order to deliver a captive…The dragon, on the other hand, is a nonhuman monster, inhabits the wilderness and way-lays those who venture away from the social center. Often the dragon wanders from its own habitat into areas of human settlement on marauding missions; but the battle between the hero and the dragon ends in the monster's death…(Evans 95)

As Evans discusses the semantic features of the dragon, he considers how a variety of medieval narratives defines the dragon category. He devises four subcategories – physiognomy,

psychology, habitat, and behavior – that these narratives use to "emphasize the differences between the *human* and the *monstrous*" (95). These categories often highlight the fusion nature of the dragon, with its reptilian body, talons, and toothy mouth, and its predatory nature, something that consumes humans and lives outside of humanity's domain of culture. These dragons can also go on marauding quests into human settlements, horde treasure, or demand sacrifices in the form of maidens. The monsters in these narratives do not blur boundaries between human and monstrous as a giant would, but rather, reinforces the separation between the human and the dragon.

The separation between human and dragons leads to a specific narrative structure: *preparation*, *travel*, *combat*, *slaying* [*dismemberment*], and *reward* (Evans 95). *Preparation* involves the hero arming himself for battle with the dragon, usually with weapons and equipment that can hold their own against the reptilian beast. *Travel* is a movement from the social sphere of humans to the wilderness of the dragon. *Combat* is devoted to describing the battle with the dragon, which leads to the *slaying* of the dragon. There is an optional part of this structure, *dismemberment*, which involves the mutilation of the dragon for a variety of purposes, such as the use of its magic blood or a severed head as proof of its death. Finally, the reward segment involves the hero looting the dragon's horde and/or a saving the princess he will later marry.

East Asia, Japan in particular, has a long history of dragon lore, offering a chance to see if traditional Japan dragon lore is similar to the European lore described by Evans. Mitchell (88-89) recognizes that the Eastern dragons, such as dragons from China and Japan, are entirely different from Western dragons. For example, Western dragons are often symbols of evil and, under Christianity, another form of the devil Lucifer. Conversely, in Japan, some practice *ryujin shinko* (竜神信仰), or dragon god faith, which is a branch of Shinto worship practices. *Ryujin*

shinko often sees the dragon as a deified snake. The snake could be used as an ingredient in folk-medicine, and harming a snake could bring about misfortune (Sasaki et al. 475-478). And yet, much like Carroll's hyper-focus on lost world narratives, the hyper-focused view of dragons in Japanese cultural beliefs does not capture the entire Japanese dragon milieu. In fact, while the culture does revere dragons at times, Japan has a similar history with augmenting snakes and other reptiles into dragons and placing humans in direct conflict with the serpents. The battle between storm god Susanoo-no-Mikoto and the dragon Yamata-no-Orochi is arguably the most famous Japanese dragon-combat story found in the foundational Japanese mytho-histories the *Kojiki* and *Nihongi* (also known as the *Nihon Shoki*).

The Orochi story is not the only dragon-combat narrative in classical Japanese literature. In the *Nihongi*, the hero Agatamori battles a *mizuchi*, a water dragon that was poisoning the land with its breath. The episode's structure follows the one that Evans constructs from medieval European dragon episodes. Other dragon episodes exist in the *Kojiki* and *Nihongi*, and while they do not follow the same overarching structure, the dragons often exhibit behavior similar to Evans' breakdown of the dragon category. An example of a dragon demanding sacrifices appears in both the *Kojiki* and the *Nihongi* (Philippi 241; Aston 206-207), but utilizing different characters and different locations. A prince is attempting to cross a body of water, but the sea god Watasumi, often as a dragon, creates a great calamity in the sea, which imperils the prince. The prince's wife asserts that Watasumi will only be appeased with a human sacrifice, and spontaneously decides to be the required sacrifice and jumps into the water. The calamity ends with Watasumi's placation and the prince manages to cross the body of water. Outside these classical works, there exist Japanese fables of dragons hoarding treasure and heroes seeking the horde. The

aforementioned story of Princess Tamatori stealing a tide jewel from Ryujin's palace, after putting the dragon king to sleep with music, is a popular example of this trope in Japanese lore.

The similarity between Evans' structure and Japanese dragon-combat narratives may be rooted in human migration, as it could be an ancient narrative retold throughout many, many generations. Julien d'Huy, a French mythologist, uses phylogenetic bracketing programs, designed originally to plot the evolutionary lineages of a species, to track the evolution of mythological narratives and tropes. D'Huy's research involves collecting massive amounts of stories from a multiple cultures around the world and breaking down the stories into their constituent mythemes.[9] By coding these mythemes and their respective regional myths into a phylogenetic bracketing program, he manages to produce an evolutionary lineage for a variety of different myths. [10]

Using this phylogenetic model, d'Huy asserts that the dragon trope dates back to the Paleolithic, and the cultural modifications to the urmyth of the dragon match human migratory paths ("The Headless Snake" 20-21; "Statistical Methods for Studying Mythology" 125-126). Just as Evans found that dragons possess certain subcategories, d'Huy found, in the dragon narratives he analyzed, specific elements came about that described the dragon in similar ways. Specifically, "[t]he dragon is a snake with scales, horns…[physiognomy]. It is a guardian of springs or other bodies of water and is capable of flight [habitat and behavior]." ("Statistical

[9] According to the Oxford English Dictionary, a mytheme is a part "of a set of fundamental generic units of narrative structure (typically involving a relationship between a character, an event, and a theme) from which myths are thought to be constructed."

[10] There is a caveat with this phylomemetic technique. Julien d'Huy's methodology is a contemporary take on a methodology once common in folklore studies and anthropology known as the historic-geographic method. By the 1970s, researchers abandoned the historic-geographic paradigm because of the nigh-impossibility of locating the original version of a story. See Goldberg, "The Historic-Geographic Method: Past and Future" (1-18) for an extended discussion on the benefits and pitfalls of the method. Regardless of the historic-geographic method and d'Huy's phylomemetic variation, d'Huy's formulation of the dragon-combat structure, derived from a plethora of sources, speaks to the possibility of a generic narrative structure.

Methods for Studying Mythology" 125) The narrative structure of the dragon-combat, according to d'Huy, has three distinct variations. The most prototypical is as follows: "*Monster appears, usually from the sea/ The monster causes mass destruction/ A hero, usually a weather god, is armed with his signature weapon and battles with the monster/ The monster is defeated/The monster is imprisoned or its body is mutilated and/or displayed"* ("*Mythologie et statistique*" 19-21).

D'Huy's structure is different from Evans' in a few regards, but that stems from the utility each structure serves. Evans is interested in analyzing how the semiotic structure of the narrative constructs the categories of hero and dragon, while d'Huy is interested in tracking the movement and evolution of a specific narrative across time and space. Despite this, we can recognize that dragon combat narratives share a deep structure that different cultures have modified and employed for different purposes. A contemporary variation or modification of the dragon-fight narrative is a specific subgenre of dinosaur fiction. The dinosaur stories that Carroll uses as counterexamples against the dragon ≈ dinosaur claim are within the lost world genre. While these lost world stories do comprise a fair number of dinosaur narratives, there are other narratives types within dinosaur fiction. Debus recognizes this variety in *Dinosaurs in Fantastic Fiction: A Thematic Survey*, which categorizes and catalogues the different subgenres within dinosaur fiction. The chapter names themselves hint at the different types of dinosaur subgenres, with the pertinent chapter being "At War with Dinosaurs" (*Dinosaurs in Fantastic Fiction* 56-72). Debus catalogues a myriad of different novels and short stories that position humans against dinosaurs, such as a "Biggest Game" type story in which human hunters seek out a dinosaur as a trophy. An illustration in the volume, artist Carl Dahlgreen's depiction of spear-wielding

American Indians battling the sauropod dinosaur *Amphicoelias*, is remarkable similar to artistic representations of the dragon-fight narrative as well.

Debus is not the only person to recognize narratives in which humans and dinosaurs come into conflict. Spanish paleontologist José Luis Sanz, in *Starring T.Rex! Dinosaur Mythology and Popular Culture*, outlines three distinct genres of dinosaur fiction:

1. Natural synchrony of primitive humans and dinosaurs (the prehistoric tale)
2. Human beings move to the place where the dinosaur survive.
3. Dinosaurs move to human societies (dinosaurs against civilization) (98)

While he does not recognize the variety that Debus does, they both recognize narratives in which dinosaurs come into conflict with human civilization not by humans moving towards dinosaur spaces, but instead, dinosaurs moving into human spaces. Luis Sanz provides a narrative structure for stories in which dinosaurs come into conflict with human civilization: "(1) The dinosaur appears; (2) Natural and social order is altered; (3) The dinosaur attacks human beings; (4) Human beings attack the dinosaur; (5) The dinosaur is destroyed; (6) Natural and social order is restored" (99).

When comparing Luis Sanz's structure to both Evans' and d'Huy's structures, the similarities are undeniable. Different scholars at different points in history and utilizing different methodologies reached these three similar structures. Where their differences stem from are the specific elements upon which each respective structure focuses. For Sanz and d'Huy, these structures focus upon the action of the monster. Evans focuses upon the human element, with the monster's actions and elements not being elucidated from the narrative structure, but from the semantic space made for it in the structure. The similarities between the dragon-combat structure

and the dinosaur-against-civilization structure provide a strong counterexample to Carroll's assertion that the narratives that feature dinosaurs are different from the ones that feature dragons.

Similarly, Mitchell's science-resurrection narrative of the dinosaur does not exist within dinosaur-against-civilization narratives. As we shall see below, these types of narratives often include scientists whose goal is not to resurrect the dinosaur, but instead, to kill it. Dinosaur slaying in these types of stories stem from the fact that dinosaurs are cast as the monster, and recognized for their fusion biologies. They are not a public spectacle to be consumed or gawked at by the masses, even if they are publicly displayed, but instead, are to be destroyed because they are threats to humankind. While the dinosaur may be a scientific object of study and a reality -- unlike the dragon -- it is still a monster. When a scientist is present, his goal is not to preserve or resurrect the dinosaur, as it is already living (and could be clashing with his/her established theories). The scientist is instead tasked with developing a way to kill the beast. The dinosaur merely made the great, reptilian monsters of folklore real. Thus, under specific narrative circumstances, dinosaurs and dragons are synonymous with each other, often taking on similar roles in their respective stories, thus providing the space for the dino-monster.

The Symbolic Nature of Dragons and Dinosaurs

Outlining how the dragon and dinosaur are categorically conflated, morphologically comparable, and narratively similar is important towards understanding how dragon and dinosaurs occupy the same symbolic landscape. However, to address their symbolic equivalence, I must discuss how the dragon and dinosaur are occasionally symbolically different. For example, Carroll's last charge against equating dinosaurs with dragons stems from the symbolism behind each category. Dragons, as symbols, "[condense] metaphysical forces such as earth, air, fire, and water into one composite entity" ("Ape and Essence" 120). Conversely, "as symbols, dinosaurs

and their fictional lost world are rather modern, i.e., as modern as our concept of pre-history" (Carroll 120). Even more specifically, through analyzing lost world narratives and King Kong, dinosaurs function as Darwinian symbols, be it biological or Social Darwinism (Carroll 125). For Carroll, dragons symbolize nature and the metaphysical forces associated with it, while dinosaurs symbolize prehistory and Darwinism. The symbolic natures are also separated temporally. Dragons are pre-modern, pre-scientific concepts and symbols, and the dinosaur is a modern and scientific symbol. What the dinosaur symbolizes, according to Carroll, are tied to modern ideas, such as the concept of prehistory.

W.T.J. Mitchell paints a similar portrait of the dinosaur's symbolic nature against the dragon's symbolic nature. Dinosaurs and dragons do many of the same things, such as guard underground treasure (be it gold or fossils), act as the object of a quest, an icon of some type (heraldry or corporate icon), or a sign of great catastrophes (Mitchell 88). Despite the similarities between the two, there is a separation because of "the dinosaur's modern, scientific status" (90). Modernity and science separate the dinosaur from the dragon on a symbolic level, as the dragon is a symbol associated with the supernatural and the fantastic as opposed to the dinosaur's relation to the natural and scientific. Mitchell, however, does not dwell on the separation between modern and pre-modern for long: "The distinctions between science and magic, the modern and the savage mind, are a very fragile basis for the distinctions between the dragon and the dinosaur…We have more complicated tools and more powerful technologies, but we basically think in the same way…" (91). If, as Mitchell states, human cognition has not changed since the extinction of the dragon and the emergence of the dinosaur, it stands to reason that the modernity/pre-modernity separation of the dragon and the dinosaur, on a symbolic level, is false.

The root of dragon/dinosaur interchangeability exists at the intersections of nature, prehistory, and knowledge of the natural world.

Using Carroll's classical natural elements, we can draw an immediate connection between dragon and dinosaur symbolism utilizing paleoart from various points in history. John Martin's illustration for *Great-Sea Dragons* features the ichthyosaurs and plesiosaurs battling in water, a common motif in Victorian paleoart. Up until the mid-20th Century, it was believed that larger dinosaurs, such as the *Brontosaurus*, lived aquatic lifestyles, and as a result, larger dinosaurs were generally depicted residing in lakes and ponds. Water is not the only metaphysical force that dinosaurs symbolize. Debus recognizes that early fictional representations of dinosaurs often included caves, suggesting chthonic connotations (*Dinosaurs in Fantastic Fiction* 17-35). An overlooked prehistoric reptile in early paleoart is the pterosaur; these flying reptiles are representative of air. Interestingly, dinosaurs have a complex relationship with fire. The plesiosaur in Martin's *Great-Sea Dragons* has light shining from its mouth, suggesting that it may breathe fire. A seemingly ubiquitous background, the volcano is an element in paleoart that constantly spews out flames and lava, a great, jagged maw (like that of the *T. rex*) belching out fire and brimstone. The fiery demise of the dinosaurs, the Chicxulub asteroid, is also common in artistic representations of dinosaur life. Rudolph Zallinger's 110-foot long mural *The Age of Reptiles* depicts the Devonian period (419 million years ago) to the Cretaceous period (65 million years ago), and through this, dinosaurs are associated with the natural forces: pterosaurs in the sky (air), brontosaurs in a lake (water), and a volcano erupting in the background (fire/earth). Thus, through these juxtapositions, Zallinger bestows the same nature-based symbolism that the dragon possesses onto the dinosaur.

The dragon and dinosaur exist as symbols of nature outside of these classical natural elements as well. Particularly, these reptilian monsters operate as symbols of nature as a whole, often in the nature/civilization binary: "The dragon functions as the hero's adversary by posing a distinct physical threat to society – a function that is accented by the dragon's antisocial habitat: the dragon must come *from* wilderness *to* a social group in order to attack it" (Evans 100). The dragon, in its occupation of the wilderness, and as a transgressor in the human social group, is nature invading human spaces. Not only is nature monstrous, but also so are animals, as they are associated with the dragon through the monster's relationship to predator animals. Nature rendered as monstrous also exists in Japanese contexts, as made evident by the description of Orochi:

> His eyes are like red ground cherries; his one body has eight heads and eight tails. On his body grows moss and cypress and cryptomeria trees. His length is such that he spans eight valleys and eight mountain peaks. If you look at his belly, you see that blood is oozing out all over it. (Philippi 89)

> When the time came, the serpent actually appeared. It had an eight-forked head and an eight-forked tail; its eyes were red, like the winter-cherry; and on its back firs and cypresses were growing. As it crawled, it extended over a space of eight hills and eight valleys. (Aston 53).

Orochi's morphological composition consists of multiple snakes and plant-life, a blend of fauna and flora of the natural world. Even metaphors applied to Orochi – his eyes red like ground cherries – figuratively melds fauna and flora. Nature exists as one being within the massive serpent's body.

Luis Sanz notes that the dinosaur-against-civilization motif brings nature into the human realm, similar to that of the dragon's role (99-100). However, another dinosaur genre offers another interesting parallel. Within the context of the lost world genre, with its preserved prehistoric environment, the prehistoric fauna – often dinosaurs – serve as protectors or guardians of nature. The lost world genre is often the inverse of dinosaur-against-civilization as humans are now invading a natural space. The nature guardian role is similar to that of Ryujin/Watatsumi or other nature-dragon deities in Shinto beliefs. Some lost world narratives often have the dinosaurs and prehistoric fauna chasing humans off (Doyle's *The Lost World*), while others often involve humans slaying dinosaurs. Debus notes "humans used weapons and war engines increasingly against dinosaurs and their brethren…both in the pulps and movie-land, we've killed them shamelessly whenever they were encountered or appeared, but especially when they invaded our cities and shores" (*Dinosaurs in Fantastic Fiction* 56). The use of military weaponry (symbols of human culture and civilization), against dinosaurs, (symbols of nature), creates a binary between civilization and nature. The dinosaur formulation of the nature/civilization binary takes on a modern, scientific spin. Dinosaurs, as symbols of nature, are also organisms from a prehistoric wilderness, a savage pre-human environment. When a living dinosaur enters human space, it threatens to resurrect the savage, pre-human environment and destroy humanity's cultural and social world. The weapons that destroy them, guns and bombs, are decidedly modern. In dinosaur narratives, the nature/civilization binary becomes a prehistory/modernity binary, where the separation is geographic (the city and the wilderness), in addition to temporal (the modern present and the savage past).

The final concept that dinosaurs and dragons symbolize is that of nuclear power and weaponry. Nuclear technology is a modern technology, thus resulting in the dinosaur taking on

this concept first. Godzilla is often the exemplar for metaphorically nuclear dinosaurs. The Japanese creators of the film intended to create Godzilla as a metaphor for the atomic bomb and the horrors it can bring to humanity (Ryfle and Godziszewski 100-103). Interestingly, this connection between the bomb and prehistoric creatures is older than Godzilla and the radioactive dinosaur movies of the 1950s. In 1946, William Laurence describes the mushroom cloud that hung over Nagasaki as "a monstrous prehistoric creature" (238) in his report of the bomb's development, *Dawn Over Zero: The Story of the Atom Bomb*. Because Godzilla has become a major international icon still popular today, the connection between dinosaurs and nuclear weaponry continues into the contemporary period.

The relationship that dragons have with nuclear symbolism is relatively recent compared to the relationship dinosaurs have had with the technology. Despite the recentness of this symbolism, the dragon has symbolized similar concepts in the past, often pulling from both technological progress and natural disasters. European dragons have a relationship with fire, a technology that could be conceived as a very early precursor to nuclear energy. After all, fires can devastate cities in a way that is loosely analogous to an atom bomb (take, for example, the London fire of 1666). Through their association with water, Japanese dragons are tied to the tsunami and the devastation that comes with the natural disaster (Rambelli 50-69). Contemporary speculative fiction often draws parallels and metaphors between nuclear technology and dragons. *Reign of Fire* presents a charred and desolate landscape aesthetically similar to post-apocalyptic worlds brought about by nuclear weaponry. Timothy Westmyer, a nuclear security manager at CRDF Global, has argued that the dragons from George R.R. Martin's *A Song of Ice and Fire* series are "metaphors for nuclear weapons." In his analysis, he notes several similarities in how Westeros, the fictional setting of the series, thinks about and uses dragons and how contemporary

politics and nation-states use and think about nuclear technology. Additionally, Martin himself has stated that the dragons are metaphors for nuclear technology and such technology can bring either progress or destruction (Pasick).

The relationship between nuclear technology and nature is subtle. Biologist Stephen J. Gould notes in *Dinosaur In a Haystack* that *Jurassic Park*, a seminal dinosaur novel and movie, is about how "[h]uman technology must not go beyond an intended order decreed by God or set by nature's law" (53). The rampaging dinosaur, brought back by the meddling of geneticists or angered by atomic weaponry, is a warning that humans have violated some natural law and will suffer the consequences of such a transgression. The natural-violation philosophy guides not just dinosaur films but monster narratives in general. Anthropologist David D. Gilmore details the etymology of the English word "monster," which "derives from the Latin *monstrum*, which like *teras* [the Greek word for monster] meant a prodigy or portent, stemming from the root *monere*, meaning to show or warn" (9). In a traditional sense, such as Medieval Christian dragons, monsters were a sign that humans have violated some divine law set by God (Gilmore 10). In the contemporary, scientific era, dinosaurs are warnings that humans have violated some natural law, such as detonating an atom bomb. The prevailing ideology of nuclear sins encompasses other monsters, such as the dragon, which is already visually, narratively, and symbolically similar to the dinosaur.

Conclusion

On a symbolic level, the dinosaur and dragon have often served as representations of the same concepts, just in different contexts. Dinosaurs and dragons have similar symbolic biologies and tend to occupy similar narrative spaces, showing that the two categories possess an analogous nature. While the analogous nature is not true of all dinosaur and dragon fiction, both

American and Japanese cultures replicate dinosaur narratives that are structurally similar to dragon narratives often enough that it requires scholarly attention. Nevertheless, within the specific context of the dino-monster, the dinosaur that takes on properties of both the dinosaur category and dragon category, the two fuse into one entity. For this reason, the dino-monster is a separate but closely related archetypal monster prevalent in *daikaiju* cinema.

However, this is just the underpinning of this thesis. In the next chapter, I shall explore the specifics of how dino-monster narratives update dragon narratives and related iconography. In Chapter II, I shall outline how contemporary dragon-combat narratives update the dragon and the dragon-slaying hero for the science fiction dino-monster film. The Rhedosaurus from *The Beast from 20,000 Fathoms* and Godzilla from *Gojira* and later Godzilla films are the archetypal examples to actively use dragon lore and iconography to augment the dinosaur into the monster. Exegesis of the design process and philosophy behind creating these monsters is imperative in elucidating how the dinosaur becomes the dragon. Similarly, understanding how the dragon-slaying hero of these films, the scientist, is constructed is important in outlining how dino-monster narratives are not about resurrecting the dinosaur for public spectacle, but instead, slaying it for human safety.

CHAPTER II. NATURE'S DRAGON: DINO-MONSTERS AND THE AESTHETICS OF DARWINIAN DRAGONS

Welcome to a new world of gods and monsters.

- Dr. Henry Jekyll (Russell Crowe), *The Mummy* (2017).

In modifying dragon narratives to feature dinosaurs, the aesthetic features of the narrative must shift to include signifiers of prehistory, and in particular, evolutionary concepts. In rendering the dragon as a dinosaur, a product of natural selection, a creator "[paves] the way for the naturalization of the once-supernatural dragon as a product of evolution" ("Monsters of the Fantastic" 279). Andriano uses this argument for monstrous figures such as Moby-Dick, the shark from *Jaws*, and King Kong. Each of these monsters is based on actual animals and possesses little of the embellishment found in more traditional, pre-Darwinian monsters – an excess of limbs or heads, a clearly chimeric morphology, or fantastic abilities. Dragons might be premodern and nonexistent, but that has not stopped us from approaching dragons as objects of scientific study. British docufiction *The Last Dragon* (known as *Dragons: A Fantasy Made Real* in the United States) traces a fictional evolutionary history of dragons from the Mesozoic, as contemporaries of dinosaurs, to the Middle Ages, when its line goes extinct. The 2004 docufiction is similar to Peter Dickinson's 1979 speculative evolution book *The Flight of Dragons*, which outlines not just a fiction evolutionary history of the dragon, but also speculations on its biology. A recently discovered dinosaur, the *Yi qi*, is small but looks like a dragon and has been called the "dragon dinosaur" in the press (Lacerda and Garland). Rendering the dragon as a natural entity means endowing it with monstrous traits that were once understood

as supernatural, such as albinism and gigantism, but now have scientific, naturalistic explanations. The dragon is brought out of the realm of supernaturalism and into the world of naturalism.

Naturalizing the dragon tends to involve an invocation of the dinosaur. *The Last Dragon* makes early dragons contemporaries of dinosaurs, and postulates that they share a common ancestor. Another way of naturalizing the dragon comes not from scientific speculation but from utilizing the constructed nature of the dinosaur image to render the dinosaur as draconic. W.J.T. Mitchell argues that dinosaurs are constructed images because we have to reconstruct them to be able to comprehend their form and shape. Reinforcing the idea that dinosaurs are fusion figures, Mitchell states, "We never see a dinosaur without saying something about it, naming it, describing it, or telling its story. The dinosaur is thus a composite 'imagetext,' a combination of verbal and visual signs" (51-52). While paleobiologists and paleoartists attempt to reconstruct dinosaurs in a scientifically accurate way, there must be recognition that dinosaurs are constructed, in some form, by the culture around them. This means, that unlike in the case of Moby-Dick or Kong, whose forms are already known to us, certain aesthetic features of the dinosaur, such as scales, feathers, and sometimes entire bodies, come from educated guesswork, idiosyncratic imagination, and socio-cultural aesthetics. The dinosaur is spawned not just from inferences made from bones but also the human imagination, creating the opportunity to fuse the dragon and the dinosaur.

Dragon Traits on Dinosaur Bodies

The creators of the dino-monsters that appear in the three films discussed below utilize this constructed aspect of the dinosaur to draconify the dinosaur, or inversely, naturalize the dragon. In addition, these films modernize the archetypal characters that appear in dragon

narratives, such as changing the warrior hero into a scientist hero. A draconified dinosaur possesses the traits of a dragon, and, as discussed in the previous chapter, the morphologies of the dragon and dinosaur are already similar. These similarities – in particular, reptilian-avian-mammalian hybridity – allow for a construction of a dino-monster imagetext that imposes other features of the dragon upon it. Jonathan D. Evan's subcategories are exemplary dragon traits often encoded into the dino-monster imagetext. These subcategories are physiognomy psychology, habitat, and behavior, which dictate that the dragon psychology is one of "bestial malevolence," its habitat a "remote and solitary" wilderness, and its behavior attacking human settlements and breathing fire (Evans 95). Julien d'Huy reaches a similar conclusion for the dragon's habitat and behavior: "It is the guardian of springs or other bodies of water and is capable of flight….It is opposed to thunder/light and is connected with them. It causes tornados and floods" ("Statistical Methods for Studying Mythology" 125). The dragon also causes mass destruction and actively preys upon humans ("*Mythologie et statistique*" 19-22). Stith Thompson's motif-index corroborates Evans and d'Huy's aspects of the dragon, such as breathing fire (351), possessing venom (351), living in a body of water or outside of human settlements (351), demanding human sacrifices (353), fighting humans (354), and exhibiting immunity to traditional weaponry (355). A dino-monster possesses (but is not strictly limited to) the traits listed above. The fusion of the dinosaur imagetext with draconian traits produces not just a draconified dinosaur, but also a naturalized dragon, a monster removed from the supernatural realm and placed into the natural world. The divine or supernatural does not explain the traits and powers of the naturalized dragon, but instead, the explanations come from science (or pseudo-science, in which science fiction films are often wont to indulge).

The Rhedosaurus, the giant dinosaur from *The Beast from 20,000 Fathoms* (hereafter *The Beast*), and Godzilla from *Gojira* and its numerous sequels are intimately related. The narratives are quite similar, as the former inspired the latter: A dinosaur, awakened by nuclear weapons testing, terrorizes a major urban center. The similarity between the film's narratives and nuclear metaphors comes from the fact that *The Beast* directly inspires *Gojira*. *The Beast*, an American film, was the result of the collective artisanship of a handful of important cinematic and literary figures. Eugène Lourié directed the film, and it is the first of the three dino-monster films he would direct in his career. Stop-motion master Ray Harryhausen designed and animated the film's dinosaur antagonist, the fictional Rhedosaurus. The most interesting aspect of the film's production is the influence of Ray Bradbury, critically acclaimed author. The title was lifted from Bradbury's 1951 short story "The Beast from 20,000 Fathoms," later changed to "The Fog Horn" in anthologies (*Dinosaurs in Fantastic Fiction* 74). While the film is not directly inspired by the short story, visual references to the short story are made, and Bradbury is given credit in the opening title sequence. Despite Bradbury's accredited influence, *The Beast* is a thematically simple movie. Despite lacking subtlety or nuance, the theme of the movie, the threat of nuclear weaponry, carries weight and establishes a pattern prevalent in later dino-monster films.

Gojira's development and production relates directly to *The Beast*. After a movie deal between Toho Studios and Indonesian film company Perfini fell through in April of 1954, Toho producer Tomoyuki Tanaka was hard pressed to pitch another film to the studio. During this time, he had encountered *The Beast* (Ryfle and Godziszewski 86; Kalat 13-14; Ragone 34); though how much he was exposed to the film is unknown. Ragone reports that he had seen the film and its story in a trade magazine (34). Regardless of the exact nature of the exposure, on the plane back to Tokyo, Tanaka devised a story that combined *King Kong*, *The Beast*, and the Japanese

fears of radiation (Ryfle and Godziszewki 86; Kalat 13). Specifically, Tanaka was interested in tapping into anxieties around a recent national tragedy, the Lucky Dragon No. 5 (Dai-fukuryu-maru) incident. On March 1st, 1954, a tuna trawler was caught in the fallout range of an American hydrogen bomb test around the Marshall Islands. Tanaka wrote up a treatment of the story on the flight named *Kaitei Niman-ri Karakita Daikaiju*, or *The Giant Monster from 20,000 Miles under the Sea* (Ryfle and Godziszewski 88; Kalat 14; Ragone 34). The treatment would be given to novelist Shigeru Kayama, who created a preliminary story that was shown to Toho. Eventually, the film would be renamed *Gojira* during production. Toho greenlit the film and would employ Ishiro Honda as director and Eiji Tsuburaya as head of special effects. These two men eventually formed the core production team of Toho's Godzilla, *kaiju*, and science fiction films until the late 1960s.

An attentive reading of the creation of both of these iconic dino-monsters shows that the integration of dragon iconography and dragon imagery may not be entirely accidental, as Delahoyde suggests in his article "Medieval Dragons and Dinosaur Films." The interaction between authorial intentions and unintended meanings is difficult to suss out, but it seems that the creators were intentionally naturalizing the dragon in some instances and unintentionally doing so in other instances. Take, for example, the creation of the Rhedosaurus for *The Beast*. While stop-motion maestro Ray Harryhausen ultimately designed the monster, Eugène Lourié chose the animation method, as other methods, such as gluing fins and horns onto living reptiles and photographically enlarging them, were unsatisfactory (Cooke 9). Additionally, the use of a man-in-a-suit (called suitmation) was possible, but previous examples often produced stiff and unconvincing dinosaurs (Cooke 9). Harryhausen was hired to create the monster for the film, and some of his production notes still exist.

The final Rhedosaurus design resembles a cross between a *Tyrannosaurus rex* and a crocodile, with a dinosaur head like a *T. rex* and the body morphology of a crocodile. A particularly interesting feature of the Rhedosaurus is its massive canines, something neither the *T. rex* nor crocodile possess – this is a particularly mammalian quality on an otherwise reptilian monster.[11] Harryhausen created a prehistoric monster that resembles actual animals but exists in a realm unto itself. How he composed the design, however, illustrates how he was attempting, perhaps unconsciously, to create a draconified dinosaur/naturalized dragon.

In *The Art of Ray Harryhausen*, co-authored by himself and film historian Tony Dalton, Harryhausen provides some insight on why he settled on this crawling "tyranno-dile" design for the Rhedosaurus. In the artbook, Harryhausen admits to his love for art by acclaimed paleoartist Charles R. Knight and admits that Knight's work inspired his own (Harryhausen and Dalton 70). The initial concepts thrown around for the Rhedosaurus included "an octopus, a large shark, and even a leviathan, but none of these images seemed right to me, so I experimented with other ideas, including a [*sic*] octopus-like alien creature and what looks today to be a dragon, but in the end, I knew it had to be a dinosaur" (Harryhausen and Dalton 74). Harryhausen's rejection of a dragon-like design is interesting but, unfortunately, the design is not included in the book. What is mentioned, though, is that Harryhausen did not want to use a T. rex because "[it] was too 'normal'" (Harryhausen and Dalton 74). This led to a handful of designs that included a bipedal dinosaurian monster, a triceratops-like design, a beaked-lizard, and an uncomfortably pug-faced lizard.[12] Each iteration of the design came closer to what the final Rhedosaurus would look like, and early on in this process, he realized he wanted "a more carnivorous interpretation for the

[11] The dentition of the Rhedosaurus is subtle part of its fusion nature. Both crocodiles and dinosaurs have undifferentiated dentition, or teeth of similar shape and size. In comparison, mammals and the mammal-like reptiles they evolved from have differentiated dentition, or teeth of different shape and size.

[12] This piece of concept work is not in the book, but instead, was tweeted out by the official Ray Harryhausen Twitter account that is now run by The Ray and Diana Harryhausen Foundation.

final design" (Harryhausen and Dalton 95). While the Rhedosaurus design does not possess any intended intentional and explicit dragon influences (such as wings or horns), its behavior, psychology, and habitat reflects the dragon influence, as will be discussed in a later section.

The creation process for Godzilla was, in some ways, very similar to the creation of the Rhedosaurus. However, it was also clear that the Japanese creation team was interested explicitly in fusing the dinosaur with the dragon. Godzilla's morphology is a combination of three dinosaurs specifically, unlike the Rhedosaurus. Godzilla is a combination of the *Tyrannosaurus rex*, *Iguanodon*, and *Stegosaurus*, making a hybrid creature that resembles no known dinosaur, yet reinforcing his great dinosaurian image. Much in the way that the dragon is a fusion of different genera, Godzilla is a combination of different dinosaurs. Compared to the Rhedosaurus, who signifies prehistory by looking vaguely like a prehistoric reptile, Godzilla and his aesthetic origins result in a stronger signification. However, Godzilla's dinosaurian form came about after a long creation process, and the author's intentions to create something mythic are clear.

Despite Godzilla's conception stemming from *The Beast*, an early version of the story pitched to Toho had Godzilla (not yet named) as a giant *octopus* (Kalat 14). When development of the movie officially began, the production crew considered some non-dinosaurian designs. The name *Gojira* itself stems from the combining the Japanese word for "gorilla" (*gorira*) and "whale" (*kujira*), leading designers to produce either gorilla or whale-like designs (Ryfle 23). A strange primate (Ryfle and Godziszewski 89) and an abstract humanoid monster with a head rendered like a mushroom cloud (Ragone 38) were potential Godzilla designs as well. However, these were rejected and the creative team turned to dinosaurs as inspiration.[13] Rudolph

[13] The rejection of a whale-like design in place of a dinosaur-dragon design is particularly important. There exists a *yokai* (a strange apparition) in Japanese lore known as the *bake-kujira*, or "ghost whale." The fusion of the dragon

Zallinger's painting of a *T. rex* and Zdenek Burian's painting of an *Iguanodon* are known to be direct inspirations for Godzilla's design (Ragone 38-39), and Kalat notes the crew took inspiration from Eastern dragons in addition to the dinosaurs (16). The presence of a direct inspiration from the Eastern dragon tradition may hint at why Godzilla's plates, inspired by those of the *Stegosaurus*, are jagged and uneven, resembling no known dinosaur morphology. Stylizing natural features of animals is common in Japanese iconography, and exists in other genres of art.[14] Once again, the dragon and the dinosaur meet in this hybrid image of the dino-monster. Assistant director Koji Kajita recalls disappointment over early dragon-dinosaur designs, stating, "It was just a reptile, not a bit scary" (qtd. in Ryfle and Godziszewski 89). The change that made the design more threatening would be the addition of alligator scales as skin texture (Kalat 16; Ragone 39). The creators of Godzilla were very interested in creating a dinosaur but also in creating a dinosaur that went beyond what the public had already seen.

The choice of using a dinosaur as the basis for Godzilla's design was intentional on the creator's part, but the naturalization of the monster in *Gojira* was extremely important to the production crew. Ishiro Honda, *Gojira* director and screenplay co-writer, faced a particular challenge with the monster film, recounting how people responded to the concept of *Gojira* early in its production:

> When the plan for [Gojira] came up, people had no clue about what it was, so everyone looks at it as if it was funny. "What, some big thing shows up in Tokyo? That's so stupid!"

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and the dinosaur must have provided a new type of monster that overrode the appeal of the *bake-kujira* or other *yokai* that were more culturally relevant at the time.

[14] Japanese artist Junji Okubo, best known for his science fiction and robot artwork, uses *keren*, a term from *kabuki* theatre, to describe the stylization common in Japanese science fiction. According to Okubo, a combination of Buddhist influences and stylized *kabuki* theatre form part of Japan's "national taste" and influences artistic design (Cacophanus).

> But because of my background as a kid, when I liked [science and] unusual things, I had no problem taking it seriously (qtd. in Ryfle and Godziszewski 86).

Honda had to make the film believable and interesting to an audience that was already skeptical about its premise. The choice of pairing Honda with Eiji Tsuburaya allowed the director to approach the concept of *Gojira*, a monster rampaging through Tokyo, with the seriousness that it needed. While Tsuburaya was interested in creating "fantastic images[,] Honda was rooted in science, facts, and reality" (Ryfle and Godziszewski 87). Undoubtedly, this mixture of the fantastic and science helped naturalize the supernatural concept that was *Gojira*, a pairing of the traditional dragon with the modern image of the dinosaur. The usage of the dinosaur was deliberate as it brought reality to *Gojira* because Godzilla was based on, or at least reflected, actual animals.

The creation of both of these dino-monsters reflects Mitchell's conceptualization of dinosaur-as-imagetext. Both the Rhedosaurus and Godzilla draw from very specific dinosaurs that have pre-existing cultural connotations, which according to Mitchell's concept of the imagetext (51-52) loads both dino-monsters with significant meaning. The composite and constructed nature that comes from the use of dinosaur imagetext brings these dino-monsters closer to the dragon, specifically, their use of the *T. rex* imagetext. While Harryhausen and the Toho creative team eschewed the singular use of the *T. rex* for similar reasons – that it appeared too normal or mundane – for more embellished designs, the tyrannosaurid elements of these two dino-monsters, such as the Rhedosaurus' massive predatory head and Godzilla's theropod stance and head, stand out compared to the other design inspirations. Recalling sociologist Albert Bergesen's statement, that "[o]ne way to [update the dragon] is to take a somewhat similar reptilian form – like a dinosaur, and at that, the most ferocious of all, Tyrannosaurus Rex [*sic*] –

and make him the foundation for neo-Dragon imagery" (202), considerations of how the Rhedosaurus and Godzilla utilize specific dinosaur iconography is important in understanding how the dragon is naturalized and becomes a dino-monster.

While dinosaur-based paleoart has included conflict among the dinosaurs since its early days, reflecting what Noël Carroll calls the "archetypal clash for survival" ("Ape and Essence" 120), the *T. rex*'s visual history includes decades of combat unlike any other dinosaur. Paleoart historian Allen A. Debus recognizes three distinct eras for tyrannosaurid representations in paleoart: the "Savage Rex" era (1902-1942), the "Lordly Rex" era (1947-1975), and the "Renaissance Rex" era (1979-2000) (*Paleoimagery* 158). These three eras also function as archetypes for the *T. rex* that characterize the dinosaur in very specific ways. Because Harryhausen and the Toho crew were operating in the 1950s, the *T. rex* imagery they pulled from included the Savage Rex and the Lordly Rex. As mentioned before, Harryhausen pulled his dinosaur imagery from Charles R. Knight, whom Debus credits as a major Savage Rex painter (158), and the behavior of the Rhedosaurus replicates this. The Savage Rex is often shown engaging in sparring matches with other prehistoric fauna, such as Knight's two paintings of the *T. rex* facing off with a *Triceratops* or with King Kong in the 1933 film. The Savage Rex is violent and bloodthirsty, and the Rhedosaurus reflects this inspiration with the dino-monster often destroying human settlements without much cause or eating humans. The Savage Rex and Rhedosaurus' violence reflects the psychology and behavior outlined for the dragon by mythologists and folklorists.

Godzilla's utilization of *T. rex* archetypes is different, as it pulls from both the Savage Rex and the Lordly Rex. However, the Lordly Rex determines more of Godzilla's design, because as previously mentioned, the Toho production crew pulled from Zallinger's *T. rex* from

the *Age of Reptiles* mural. According to Debus, the *Age of Reptiles T. rex* is the best example of the Lordly Rex, which is defined as a tyrannosaur that "[exudes] a self-confident, battle-hardened, unthreatened demeanor, evidently secure in [its] role as Mesozoic overlord…" (*Paleoimagery* 159). Godzilla's design is as bulky as the *Age of Reptile T. rex*, and he possesses a thick brow similar to Zallinger's tyrant king. *Gojira* even asks the audience to identify Godzilla with the Lordly Rex when paleontologist Kyohei Yamane (Takashi Shimura) explains Godzilla's prehistoric origins with a slideshow that includes Zallinger's *T. rex*. Godzilla's design may pull directly from the Lordly Rex, but his behavior often recalls the violence of the Savage Rex, as he often destroys without conviction or motivation. This hybrid of Savage-Lordly Rex reflects the more ambivalent nature of the Japanese dragon, which can operate as both a destroyer and a god, continuing "an Asian tradition of symbolizing power" (Bergesen 202).

The supernatural powers that dragons also possess, such as a deadly bite, poisonous breath, or fiery breath, are not abandoned by naturalizing the dragon. These powers find themselves reintroduced as specific aspects of the dino-monster, often explained scientifically. While a lethal bite or poisonous breath is not inherently supernatural, as plenty of animals are venomous or poisonous, the toxic nature of the dragon is different in the mid-20th-century dino-monster narrative. After all, venomous bites were mundane in the atomic era, with anti-venoms becoming more widespread around this time (Dart 250). Instead, for the Rhedosaurus, the toxicity of the dragon is a "horrible, virulent contagion" contained within the dinosaur's body, an affliction whose cure is unknown. In the film, after the military wounds the dinosaur with heavy ordnance, the Rhedosaurus begins to bleed onto the street. A later scene shows soldiers trekking down the city streets, hunting for the escaped Rhedosaurus after a shot focusing on a glob of the

dino-monster's blood. As the trek continues, the soldiers get progressively sicker, with many dying on the street.

Godzilla's toxicity stems from a different, more frightening source. While both dino-monsters are arguably metaphors for nuclear weaponry, the Rhedosaurus has little in the way of directly invoking such imagery. At this point, the Godzilla breaks away from the Rhedosaurus. Godzilla does not carry biological contagion, but instead, emits deadly ionizing radiation because of his exposure to a nuclear explosion. Godzilla's first on-screen appearance happens on Odo Island when a research team investigates the damage done to a local village. The team finds that various structures, ones that Godzilla crushed, are radioactive. Radiation, like Rhedosaurus' contagion, is an updated form of the dragon's venom. In *Godzilla Raids Again*, the immediate sequel to *Gojira*, Yamane makes a cameo and reinforces Godzilla's radioactive nature, stating, "[O]ur arsenal and our intelligence together cannot stop the terrifying, radiation-containing, atrocious Godzilla." Emitting deadly doses of radiation is not the only way Godzilla updates some supernatural aspects of the dragon. Godzilla also breathes out deadly radioactive fire that he uses to set Tokyo ablaze and annihilate military opposition. While fire-breathing is certainly a fantastic ability, recall that this is not the first time that prehistoric reptiles have been ascribed this power.[15] John Martin's illustration in Hawking's *The Book of Great-Sea Dragons* shows a plesiosaur emitting light from its mouth and nostril, suggesting that it may breathe fire.

The naturalization of the dragon goes beyond constructing a dinosaur from dinosaur parts and the imagetexts of the dinosaur's body. Dino-monster narratives rely on a metonymy with the environment to augment themes of prehistory, evolution, and nature. The films rearrange the

[15] It bears mentioning that Young Earth Creationists, who often argue that dinosaurs are the dragons mentioned in the Bible, have resurrected the idea of the fire-breathing dinosaur. See Duane Gish's 1977 children's book *Dinosaurs, Those Terrible Lizards* for an example of such a ridiculous claim. For a retort to this general argument, see Philip Senter's article "Fire-Breathing Dinosaurs?" in *Skeptical Inquirer*, Volume 41, issue 4.

concept of the dragon's habitat, the wilderness, as a place lost to time, a prehistoric era filled with other prehistoric beasts and monsters. Unfortunately, for the prehistoric animals, humans now inhabit these habitats. In *The Beast*, protagonist Thomas Nesbitt (Paul Christian), a nuclear physicist, spots the Rhedosaurus after its release from a glacier in the Arctic by a nuclear bomb test. Upon returning to New York City, Nesbitt works with paleontologist Thurgood Elson (Cecil Kellaway) and his assistant Lee Hunter (Paula Raymond) to identify what he saw. The film shows Nesbitt going through a number of dinosaur paintings (many of which are by Charles R. Knight). Eventually, Nesbitt finds an image of the Rhedosaurus in the mix, and Elson provides some expository dialogue explaining the dinosaur's identity. The Rhedosaurus, according to Elson, is a large carnivorous dinosaur whose fossils have been found in the underwater canyons of the Hudson River. The dino-monster's habitat may not always be a far-off lost world in a geographic sense but in a temporal sense. The prehistoric past, the dino-monster's wilderness, is now where humans have built their concrete jungles.

Godzilla's original habitat is unclear. In a scene set in the Japanese Diet, Professor Kyohei Yamane gives a lecture to the Japanese parliament about Godzilla. If Godzilla's dinosaurian morphology was not enough to render the dragon as natural and prehistoric, Yamane does so verbally. He explains Godzilla is from the Jurassic period in a lecture accompanied by a variety of different artistic slides showing dinosaurs and prehistoric life. Other slides contain images of geological deep time, showing where the Jurassic period is located in terms of sediment deposits. As evidence to support this claim, Yamane presents to the parliament a trilobite, a prehistoric marine arthropod found in one of Godzilla's footprints. Not only does the film use Godzilla's dinosaurian morphology to link him to the past, it also uses prehistoric metonymy. Despite this temporal location, the film never specifies Godzilla's exact natural

habitat. However, characters in *Gojira* insist that Godzilla is occupying Japanese territorial waters, suggesting Godzilla's natural habitat is located in or around Japan.

Scientist-Heroes in *The Beast* and *Gojira*

The naturalization of the dragon into a dinosaur also reconfigures the warrior hero that slays the dragon. In ancient myth and iconography, the dragon-slayer is often a warrior, such as a soldier or a knight. The binary nature of dragon-combat narratives defines the hero against the monstrous, malevolent dragon, meaning the hero is identifiably human, is not guided by malevolence, and he lives within society. The hero's occupation as dragon-slayer encodes the message "the warrior is a hero" (Evans 96). Additionally, deities often guide dragon-slaying warriors (such as St. George), or in other cases, the warrior is a deity (such as the storm god Susanoo). Unlike dragon narratives, however, the hero of a dino-monster film is rarely a warrior despite the military presence in these films, and there is often no divine presence driving the hero. Instead, they are scientists who are keenly aware, through their scientific training, that the monster is evil and destructive. Essayist Susan Sontag notes that the scientist-hero is often involved in the plot of the science fiction film, and can be either a social or an asocial character (207-211). However, the presence of the monster drives the scientist-hero out into the social world, and it is his knowledge of science that often allows him to destroy the invading monster (Sontag 210-211). The usage of the scientist-hero is interesting compared to the warrior hero, as while both uphold the binaries of instinct/reason and human/animal, the scientist does it in a slightly different way.

Sontag notes that "science fiction films are strongly moralistic. The standard message is the one about the proper, or humane, use of science versus the mad, obsessional use of science" (216). In the films, the obsessive use of science appears as the atom bomb itself, whilst the

humane use of science is usually creating an invention that can help humanity, such as a new energy source or a weapon that can kill the monster, a common trait shared by the scientist-heroes in *The Beast* and *Gojira*. Not all scientist-heroes are inventors, though. Some of them can provide information about the monster, thus providing knowledge that can kill it. *The Beast* and *Gojira* both utilize the scientist-hero to similar and different effects, with the differences stemming from different cultural values and histories.

In the dino-monster narrative, the paleontologist seems like the logical choice for the scientist-hero. But, for both *The Beast* and *Gojira*, this is not the case. Instead, the scientist-heroes are nuclear physicist Thomas Nesbitt and chemist Daisuke Serizawa (Akihiro Hirata), respectively. Nesbitt, as a nuclear physicist, oversees the creation and detonation of atomic weaponry, but he muses over the side effects of the bombs: "What the cumulative effects of all these atomic explosions and tests will be, only time will tell." He is concerned about the negative, almost mad and obsessive, need to test and use atomic weaponry. His musings are prophetic, as the bomb test he supervises in the beginning of the film releases the Rhedosaurus from its icy tomb. Later in the film, after the Rhedosaurus' contagion is discovered, Nesbitt is the one who devises the plan to kill the dino-monster. This plan involves a grenade rifle and grenade containing a radioactive isotope to be fired into the open wound of the Rhedosaurus, which will kill it instantly while keeping the contagion inside the monster's body. It is Nesbitt himself that fires the radioactive grenade into the dino-monster's wound, thus killing it in a fiery climax on Coney Island. The scientist-hero puts on the mask of warrior hero in this regard, but this blurring of scientist and warrior originates from American conceptualizations of scientists in the late 20th century. While Bernard Mergen argues in "Diplodocus Carnegiei Meets Andrew Carnegie: The Paleontologist as Culture Hero" that the paleontologist should be thought of as culture hero

between the years of 1801 and 1915 (579), a shift occurs after the Second World War. Nuclear physicists, those who produced atomic weaponry that kept the United States in competition with the Soviet Union, become the standard scientist-hero professionals because they could manipulate the most powerful weapon on Earth.

The scientist-hero in *Gojira* is a bit more complicated in terms of characterization, as is his placement within the narrative structure. Daisuke Serizawa, the somber chemist, is not the protagonist of the film. Instead, he is a secondary character, whereas Hideto Ogata (Akira Takarada), a salvager, is the protagonist of the film. Regardless of his placement within the agonistic structure of the story, Serizawa performs the actions of the scientist-hero. As a chemist, he invents something called the Oxygen Destroyer, a chemical compound capable of breaking down oxygen in the water and dissolving all organic tissue therein. The Oxygen Destroyer disturbs Serizawa and he keeps it secret, but after some rough negotiating with Ogata decides to use the device to kill Godzilla. Serizawa commits suicide in the film's final scene as he activates the Oxygen Destroyer and kills Godzilla.

Comparing Nesbitt to Serizawa shows two different cultural spins on the same character archetype. Both Nesbitt and Serizawa are confident in their abilities as scientists, but Nesbitt is extremely optimistic in his work and Serizawa is terrified by his own. Nesbitt's optimism stems from the fact early "American science was considered the 'true handmaiden of theology' because it studied the works of the Deity" (Mergen 579). While this argument is geared towards the understanding of the paleontologist as a culture hero, this applies to scientists such as nuclear physicists as well. The act of using nuclear power, according to Nesbitt, is "helping write the first chapter to a new Genesis." While the scientist from the 1950s may not be practicing religiosity in the same way that a scientist from the early 1800s was, an understanding of the

nigh-biblical nature of their research is present. However, this act of creation is not divine, but instead, human-made. In fact, in Nesbitt's constant need to use science to defeat the Rhedosaurus, the religious connotation present in the warrior-hero narrative shifts away from a deity to that of science. The scientist-hero is involved in spreading scientism. However, due to the simplistic morality of the scientific movie, the scientism of the scientist-hero stems from the "proper, or humane, use of science" (Sontag 216). Because of this, the film spends little time ruminating on the actual horrors of the atomic bomb, as the U.S. has never experienced them, and instead places the inventor of an atomic bomb in the role of a hero.

Serizawa, on the other hand, is the dragon-slaying hero, but his characterization is more nuanced as he is aware of the horrors his invention, the Oxygen Destroyer, can bring about. In fact, Serizawa makes apparent the metaphorical nature of the Oxygen Destroyer in a movie about the horrors of the atom bomb: "Atomic bomb versus atomic bomb. Hydrogen bomb versus hydrogen bomb. And to introduce this new terrifying weapon to humankind on top of that? I cannot allow it as a scientist. No, as a human being." The awareness Serizawa has about his own invention deepens the character archetype and shows that the scientist-hero can also be the scientist-villain, as he can easily participate in humane and evil science at once. This stems from director Ishiro Honda's personal beliefs about science, stating about the film "I wanted to express my views about scientists…They might invent something wonderful, but they also must be responsible for how it is used….I wanted to warn people about what happens if we put our faith in science without considering the consequences" (Ryfle and Godziszewski 99). Honda, being both scientifically literate and a Japanese citizen, was keenly aware of the benefits and dangers of nuclear technology, and by encoding the Oxygen Destroyer as a metaphor for such

technology, presented Serizawa as a nuanced scientist-hero that understood the great risk of the science he practiced.

Nonetheless, *Gojira* portrays scientists in general in a more positive light than *The Beast*. This is in reference to the portrayal of the paleontologist characters in the films, Thurgood Elson and Kyohei Yamane. Both of these scientists argued that their respective beasts should be left alive for the benefit of science and human knowledge. Elson is played like a doting grandfather, a character meant for identification in some ways. He is merely interested in understanding the Rhedosaurus, seeing as he is a paleontologist. This interest is what leads to his death, as the diving bell he observes the Rhedosaurus from is eaten by that very creature. If anything, Elson's purpose is to remind readers of foolish and unchecked curiosity. Such a characterization is very different from the rough-and-gruff, capitalist culture hero from the 19th century that Mergen describes. Instead, this paleontologist is the emasculated man that Mitchell describes in his analysis of the film *Bringing Up Baby* (174-182).

In regards to Kyohei Yamane, he has similar motives to Thurgood: he wants to study Godzilla for his scientific value. However, like Serizawa, Yamane tends to be a somber character. Yamane understands both the threat Godzilla poses to humanity and the great scientific strides made from studying Godzilla. Additionally, he faces pressure from the Japanese government to devise a way to kill Godzilla. These narrative differences result in the motivations behind Elson's interest in the Rhedosaurus and Yamane's wish to keep Godzilla alive. Elson's interests come from pure intellectual curiosity, while Yamane wants to know how Godzilla survived a nuclear explosion and the fallout. Effectively, Yamane wants to study Godzilla so that he may understand how humanity could survive a nuclear attack. Yamane's desire to help humanity matches Honda's goal in promoting science as socially beneficial. The scientist as a social entity

also results in Yamane participating in more social work than Elson when the former adopts Shinkichi, an orphaned child that survived Godzilla's attack on Odo Island. This is a particularly interesting background element in *Gojira* because the film never addresses it directly. Ryfle and Godziszewksi note that adopting unrelated children in Japan, to this day, is uncommon and reflects Honda's views that scientists should be socially progressive (309), suggesting that Honda was attempting to normalize an atypical, but beneficial, social practice in Japan.

Conclusion

In naturalizing the dragon, *The Beast* and *Gojira* update the imagery and aesthetics present in dragon narratives for the mid-20th century. This involves the utilization of the Lordly and Savage Rex archetypes, a portrayal of a popular dinosaur that allows for the easy transplantation of draconic traits onto a naturally occurring, albeit extinct, organism.. The films position the scientist as the hero of the narrative instead of the traditional warrior of dragon-slaying narratives. In using a scientist as the dragon slayer in the dino-monster narrative, the hero of the narrative becomes someone who possesses knowledge about the monster, but more importantly, makes the hero a character that culturally signifies knowledge and control over nature.

The aesthetic choices made in creating the dino-monster and rendering it draconic invokes a specific dragon archetype that Joseph D. Andriano coins: The Dragon of the Apocalypse. The apocalyptic dragon is the monster in *The Beast*, *Gojira*, and *Godzilla Raids Again*, the three films analyzed in the next chapter. Just as the Rhedosaurus and Godzilla denote a dragon that is natural, and thus evolved, so too do these films' narratives approach Darwinian evolution and humanity's place within the grand scheme of life and nature.

CHAPTER III. DRAGON OF THE APOCALYPSE: DINO-MONSTERS AND PROGRESSIVE EVOLUTION

But humanity, in reality, is poised midway between gods and beast.

Plotinus, *The Enneads of Plotinus*

Joseph Andriano asserts that there are two dragon archetypes after analyzing Moby-Dick, Peter Benchley's eco-horror *oeuvre*, and other contemporary monster stories: The Dragon of Eden and the Dragon of the Apocalypse ("Monsters of the Fantastic" 279). These archetypes are mirror opposites of each other, representing two opposing interpretations of the dragon:

> [The Dragon of Eden] takes the creature out of the realm of the monstrous and acknowledges our kinship with other animals (think the telepathic bond between human and dragon in the *The Dragonriders of Pern* or even the 2010 animated film *How to Train Your Dragon*), our common ancestry with reptiles and raptors, and our recognition that all human races are one; while the latter asserts the monstrosity of the dragon, embodying Otherness, discontinuity between races, nations, religions, erecting a hierarchic ladder onto the Tree of Life ("Monsters of the Fantastic" 279-280).

The archetypes position the dragon as a signifier of many different ideas, but ideas based on evolutionary concepts. Using the Dragon of Eden and the Dragon of the Apocalypse, Andriano interprets post-Darwin monster myths as narratives that highlight anxieties over evolutionary theory, and in some form or another, address the concept of human evolution. In particular, these fears stem from the fact that humans share a connection with animals, that what separates us

from animals is not a separation of kind but of degrees (*Immortal Monster* xii). More often than not, Darwinian monster stories utilize the Ladder of Being, a concept devised by Aristotle that places humans and animals in a "natural" hierarchy based on degrees of perfections, with humans at the top (Guerrini 33). Even if such narratives recognize evolution through natural selection, they impose the Ladder on the Tree of Life. The Tree is a more accurate way of envisioning evolution, one that has no actual hierarchical structure and shows the relationships between every terrestrial organism, like how the smallest twig on a tree still connects to the entire body.

By imposing a Ladder of Being onto the Tree of Life (to use Andriano's expression), these Darwinian monster narratives create a system of progressive evolution. This form of evolution is guided by "the idea of progress as an organizing principle" (*Dinosaur in a Haystack* 250). Progress dictates that each new species on the ladder is better than the last, with humans often representing the top rung of this ladder. Progressive portrayals of evolutionary theory are surprisingly common, evincing that Darwin's theory of evolution by natural selection is often fundamentally misunderstood. Rudolph Zallinger's 1965 scientific illustration *The Road to Homo Sapiens*, popularly known as *The March of Progress*, which depicts a line of primates, starting with nonhuman primates marching up to human beings (*Homo sapiens sapiens* in particular) at the front of the line. Evolutionary biologist Stephen Jay Gould criticizes the illustration, stating it is the "*canonical* representation of evolution" that makes evolution by natural selection a "synonym for *progress*" (*Wonderful Life* 30-32, emphasis in original). In actuality, evolution by natural selection – also known as Darwinian evolution - is much different and not progressive. The Tree of Life is an apt metaphor for how Darwinian evolution works: [evolution] is a copiously branching bush, continually pruned by the grim reaper of extinction,

not a ladder of predictable progress" (*Wonderful Life* 35).[16] Despite Gould's disparaging comments towards the *March of Progress*, it persists as the predominant representation of human evolution.

Progressive evolution dictates a specific understanding of nature, and that is humans are at the top of the natural world. Just like the Ladder of Being, progressive evolution creates an oppositional human/animal binary.[17] Animals might be related distantly to humans, but there is a categorical separation, and progressive evolution dictates that humans are the most evolved (and, possibly, "perfect" species). The binary positions humans against other animals, including ones that might be "maladapted" or "atavistic," such as dinosaurs, a group that, under progressive evolution, is a failure because it went extinct. The dinosaur-against-civilization narrative bases itself around the coexistence of humans and dinosaurs, two groups of animals that have successfully "ruled" the Earth: "the dinosaurs had their opportunity in Nature and have no place in the present day" (Luis Sanz 100). Dinosaurs disrupt the natural and cultural order that separates humans from animals as the prehistoric beasts bring the evolutionary past into the modern era and juxtapose the extinct with extant. The threat the dinosaur poses renders it the Dragon of the Apocalypse, and only slaying the dinosaur can restore the natural and cultural order – the Ladder of Being is slapped onto the Tree of Life.

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[16] Evolution by natural selection does not lead to species that are, in some essence, better than ancestral species. Instead, natural selection dictates that species survive by their ability to adapt to new and changing environments. Despite a species' success, however, it will eventually morph into another species, responding to different environmental pressures, or go extinct entirely. See Gould, *Dinosaur in a Haystack* (248-259), for an extended discussion on evolution by natural selection and iconographical presentations of the theory.

[17] The human/animal binary also exists in traditional dragon narratives. Evans notes that construction of the hero and the dragon in the medieval dragon narrative creates a binary between human and animal (95). The Ladder of Being was popular in Medieval Europe, as Christians found it amendable to their doctrine (Guerrini 33), rendering Christian dragon narratives as stories about destroying evil, and controlling nature. Shintoism, the indigenous Japanese religion, also espoused a similar concept to the Ladder of Being (Godart 20).

The Beast from 20,000 Fathoms, Gojira, and *Godzilla Raids Again* reproduce the faulty concept of progressive, or non-Darwinian, evolution, by using the figure of the Dragon of the Apocalypse. Each film positions humans against monsters and use evolutionary theory as an origin for the monster, a monster that rises from the recess of a prehistoric deep time. However, there is merely a suggestion of the evolutionary history shared by the monster and the human, as humans quickly slay the monster, thus severing any actual connection. Additionally, these films utilize not just biological Darwinism and progressive evolution but also Social Darwinism, another faulty permutation of evolution by natural selection. While focusing on the recurring themes of progression evolution and Social Darwinism, this chapter also concerns itself with how these movies update traditional dragon lore and its associated iconography with evolutionary themes, producing the first definite dino-monster narratives. Additionally, I will discuss the connection between evolutionary imagery and nuclear imagery. The result of the thematic structure of these movies is the casting of the dino-monster as the Dragon of the Apocalypse.

The Bomb and (D)Evolution in *The Beast* and *Gojira*.

The Beast and *Gojira* utilize the Dragon of the Apocalypse to assert the monstrosity and Otherness of the dragon, seeking to create a discontinuity not only between groups of humans, but between humans and animals. These films, dino-monster ur-texts almost, are interested in imposing a hierarchic ladder of being onto the Tree of Life in a very specific way. *The Beast* and *Gojira* are concerned with evolution by tapping into social Darwinian notions of cultural devolution or extinction by featuring a monster that questions humanity's place at the top of the Ladder. At the heart of these films is an anxiety over evolutionary theory, and these films

provide a mythic structure to deal with this anxiety by naturalizing the dragon, turning it into a representation of prehistory and evolution, and then slaying it.

The Beast and *Gojira* blend the rhetoric and imagery used to discuss two pertinent topics for the mid-20th century: evolutionary theory and nuclear technology. The connection between evolution and nuclear technology, according to literary scholar Cyndy Hendershot, originates in Victorian fears about cultural devolution (319). The Victorian fear of cultural devolution, of becoming "savages," reenters the post-war American consciousness with "John Hersey's widely read work *Hiroshima* (1946), which detailed the horror of surviving the atomic bomb explosion in the city, portrayed a world of humans forced to live by instinct – in other words, forced to devolve from human social organization to a Darwinian struggle for existence" (Hendershot 319). The fear of cultural devolution carried into other rhetoric surrounding nuclear technology, which floated between hope the technology would bring about cultural evolution as atomic power provided new ways to power the world, to fear of weaponized nuclear technology and a bleak future where humans devolved from social systems or were extinct (Hendershot 320). In light of the discussion of cultural evolution, the Darwinism that Hendershot references is not biological Darwinism, but instead, Social Darwinism. Biological Darwinism describes evolution through natural selection in the biological realm, whereas Social Darwinism is the application of Darwinian principals to social and cultural objects. Social Darwinism, as defined by Japanese intellectual historian G. Clinton Godart, is "the legitimation of the struggle for survival between individuals and nations into imperialism, war, and even Nazism" (Godart 12). [18] Cultural and biological evolution according to Social Darwinism is inherently progressive as it posits a normative concept of superiority based on an individual's or culture's perceived strength and

[18] This concept is also called "the survival of the fittest" and "the struggle for existence" in other sources. Despite the differing phraseology, they all mean the same concept.

cultural progress, granting such a culture the right to dominate over another. *The Beast* and *Gojira* conflate biological and Social Darwinisms, where the strongest are humans because they possess culture and technology, and that places them on top of the Ladder of Being.

The films set up a conflict between evolution and devolution and modernity with prehistory by utilizing dinosaurs, animals that represent prehistory, and through contemporary rhetoric, the atomic bombs. Paleontologist José Luis Sanz describes the invasion of prehistory into the modern sphere as a disruption of the natural order, as dinosaurs had their chance in nature, but proved seemingly maladaptive (100). The presence of a dinosaur in the contemporary world disrupts the perception that humans are the dominant species because the dinosaur can easily destroy the social order created by humans. In relation to nuclear weaponry, early rhetoric around the atom bomb described it as a "Frankenstein Monster" (Hendershot 320), but as mentioned in the first chapter, this rhetoric shifts towards conceptualizing the atom bomb as prehistoric monster, as William Laurence portrays the atomic bomb as a prehistoric monster (Hendershot 320). This prehistoric monster, the atomic bomb, can also disrupt the social order, as evidenced by Hersey's descriptions in *Hiroshima* and Laurence's statement "that after a nuclear war, 'man of the atomic age will by force of necessity revert to the animal.'" (qtd. in Hendershot 320). Thus, the atomic bomb can displace the human from its spot at the top of the Ladder and places the dino-monster on top.

Evolution by natural selection also created anxieties in both the United States and Japan outside of Social Darwinism, and it is important to discuss the impact of evolutionary thought on both societies in the 20th century as crucial background to the analysis of dino-monster movies. Evolution challenges anthropocentrism, as it places humans not above the animal kingdom, but

within it (*Immortal Monster* xii). During the 19th century Americans used evolutionary theory as abolitionist ammunition against slavery, but only

> after they had employed Darwin's theory of natural selection on behalf of abolitionism did [American thinkers] come to discover that it also posed enormous threats to their other beliefs, including their faith in God and their trust that America was a country divinely chosen for the regeneration of the world. (Fuller x).

The other beliefs Darwinian evolution challenged were manifest destiny and American exceptionalism, crucial ideas behind American identity. Evolutionary theory also challenged religious beliefs, Christian creationism being the most prominent among them. American thinkers railed against the idea that humans and animals shared a biological link, and that humans descended from apes (Fuller 206). The battle between evolution and creationism came to a head in 1925 with the infamous Scopes Monkey Trial. In 1925, Tennessean biology teacher John T. Scopes violated Tennessee's Butler Act, which prohibited the teaching of evolution in public schools (Smout 45). The trial, which ended with Scopes losing, being fined $100, and a higher court eventually overturning the conviction, has been described as a threat to civilization, as it is portrayed as science being dominated by blind religion (Smout 45).

The creation/evolution debate received attention during the early 1950s in the United States. Creationism seeped into the high school biology textbooks around this time and helped turn the public's opinion against evolution (80). Additionally, the tension caused by McCarthyism during this period brought the Scopes Monkey Trial back into the public consciousness, as many scholars saw a repeated pattern of rationality conflicting with irrationality as a national and cultural pattern in the United States (Smout 80). Thus, the political

and ideological milieu in which *The Beast* was written and premiered was one concerned with evolution, devolution, and anxiety over human connections with animals.

Japan shared many of the same anxieties over evolution. Darwinian natural selection has a long and storied history in Japan. While the historical and religious controversy over evolution in the West, particularly in the United States, is well known, Japanese studies scholar G. Clinton Godart asserts that evolutionary theory was not passively accepted in Japan either, but instead, has been mired in controversy since its introduction in the late 1800s (15). Beginning in the Meiji period (1868-1912), and continuing into early Showa period (1926-1989), an ideology known as *kokutai* dominated the Japanese political sphere and crept into other aspects of life, such as education. This ideology "combined elements of Confucianism, German organic state theory, the warrior ethos (*Bushido*), and Shinto" (Godart 48). The *kokutai*, traditionally translated as "national polity," soon became associated with the "divine imperial line of Japan" (Godart 48), leading to Shinto creationism being taught in the classrooms (Godart 50). Perplexingly, the *kokutai* dictated Darwinian evolution be taught in the classroom as well, leading to a contradiction that created awkward questions for the populace (Godart 50). Other issues Japanese thinkers tackled involved the struggle for survival in relation to the divinity of the Japanese, and in particular, the emperor: "What would happen if a more 'fit' ruler emerged?" (Godart 55). Shinto priest Kosei Nakajima devised a tenuous solution: "humans might have evolved from earlier organisms, but the true ancestors of the Japanese were nevertheless still divine" (Godart 58). Essentially, according to *kokutai*, every other human on Earth evolved and shared a common ancestor with animals, but the Japanese were the descendants of divinity. Thus, leading up to the end of the Second World War, the Japanese government taught a contradictory

hodge-podge of Shinto creationism and evolutionary theory. Such a theory was a nationalist, Japanocentric conceptualization of Japanese divinity and exceptionalism.[19]

The clash between evolution and Shinto creationism manifested often in nationalistic debates about the human and animal connection, which produced still another contradiction. The theory of the animal ancestry of humans clashed with the Shinto belief of ancestor worship, leading major Japanese thinkers to declare that the Japanese people never evolved from animals as an answer to the question of how far ancestor worship should go back in time (Godart 55). During the war, Japanese education and propaganda exposed the public to interpretations of evolution that were ethnocentric and anthropocentric, creating a hierarchy between the Japanese and other ethnicities and between humans and animals. After the bombings of Hiroshima and Nagasaki, and the American occupation of the country, *kokutai* diminished, but its teachings of Japanese divinity and evolution most likely resided in the Japanese unconscious. During the post-war period, other biologists sought to address the animal ancestry of humans with theories that appealed not to the nationalist agenda of *kokutai*, but to some form of religiosity. Christian biologist Soichi Iwashita taught that Darwin's "hypothesis" was unlikely, believing that humans, as spiritual and moral beings, were essentially different from animals and could not have an animal ancestry (Godart 181), creating a model of anthropocentrism based on spiritualism as opposed to nationalism.

As seen with the odd contradictions that existed with *kokutai*, Shinto creationism, and evolution, the Japanese sought to affirm their superiority through both religious nationalism and

[19] Japanese general Tomoyuki Yamashita (1885-1946) describes the tension between Japanese divinity and evolution in a speech where "[h]e 'concluded that the Japanese were descended from the gods, the Europeans, as fully explained by Darwin, from monkeys. In a war between gods and monkeys, there could be only one victor" (qtd. in Godart 156). Marxist-writer-turned-nationalist Fusao Hayashi (1903-1975) described evolutionary theory as "the superstition of modernity" (Godart 193), which echoed war-time thoughts that evolutionary theory encapsulated everything wrong with modernity.

evolutionary theory. This led to a peculiar relationship with Social Darwinism: "Under the influence of Herbert Spencer [the 19th century father of Social Darwinism], [the Japanese] succumbed to Social Darwinism as justification for war and colonialism. [Other historians of Japan] have made the link more explicitly, stating that Social Darwinism became part of Japanese fascism" (Godart 12). Despite embracing the theory, Social Darwinism created issues for Japanese. Primarily, it conflicted with the cultural notion that Japan was a single harmonious nation since its creation by Izanagi and Izanami (Shinto creation deities) and that the ancestors of the Japanese nation were neither primitive nor animals. This led to a clash between Social Darwinism and Shinto creationism, as it posited "the possibility of cannibalism among the early inhabitants of Japan" which "made the point very clear; societies, norms, and ethics had evolved from simpler and less lofty beginnings, [and] are perhaps still evolving" (Godart 27). Cultural evolution, viewed from a social Darwinian perspective, was progressive, and this clashed with the idea that the Japanese people were always in a state of harmony among themselves and the gods (Godart 27). Given Hersey's description of Hiroshima after the atom bomb dropping, the reduction of the Japanese to a "savage" state was fresh in the Japanese national memory when Toho produced *Gojira*.

With the connection between evolutionary theory and atomic weaponry situated in their specific contexts, we can begin to interpret *The Beast* and *Gojira* as myths about slaying the Dragon of the Apocalypse. This apocalyptic dragon functions as a metonym of two concepts: questioning the placement of humans atop the Ladder of Being and the threat of devolution the atom bomb presents via the dino-monster. Both films establish an evolutionary past for both the nations that humans occupy and suggest an evolutionary past for humans, but despite the

suggestion of prehistory and an evolutionary past, the humans character manage to slay the dino-monster, the symbol of evolution.

The Beast and *Gojira* construct their respective national settings – the United States and Japan – as areas with prehistory, areas that reject traditional notions of creationism. In *The Beast*, Dr. Elson states that the Rhedosaurus is returning to its ancestral home, the submarine canyons of the Hudson River. The presence of a dinosaur on American soil is not exactly controversial in a traditional creationist sense. As Mitchell notes, prehistoric life and fossils were important to forming American national identity, with Thomas Jefferson being obsessed with fossils to the extent that he displayed the bones of a mastodon in the White House (111). Mitchell even connects Jefferson's creation of the constitution to his interest in prehistoric life (112-113). Closer to the creation of *The Beast*, and perhaps influencing its viewing culture more, are the Bone Wars. During this period, two rival paleontologists, Othniel Charles Marsh and Edward Drinker Cope, competed over the most dinosaur species they could find and name (Luis Sanz 6-11). This period led to what Luis Sanz calls The Second Dinosaur Rush, which started in the early 20th century, and popularized dinosaurs such as the *T. rex* (a dinosaur not discovered by Marsh or Cope, but by Barnum Brown) and *Triceratops*, both of which appeared in a revolutionary story-telling medium, the movies (20-30).

The prehistory of the United States did not challenge creationism directly, but instead, challenged manifest destiny and humanity's right over the nation. What allowed humans, particularly white Americans, dominion over the land was technological progress. This belief is best represented by John Gast's 1972 painting *American Progress*, which depicts an angelic woman Progress pushing American Indians and wildlife back as she strings along telegraph wires that guide the encroaching European population, trains, and urbanization. Technological

progress allowed Americans to dominate the primitive, savage land, and the dinosaur invasion of urban spaces disrupts manifest destiny. As Debus noted, stories of dinosaurs invading human spaces often end with humans slaying the prehistoric reptiles with their technological might, such as military weapons and war machines (*Dinosaurs in Fantastic Fiction* 56). The Rhedosaurus directly challenges such a notion because powerful military weaponry can kill the dino-monster, but the government will not be able to control the spread of the deadly contagion. The fear over the contagion permits the dinosaur to run rampant through New York City, consuming humans and destroying buildings and infrastructure. The Rhedosaurus, as both a symbol of the bomb and prehistory, contests human dominance, threatening human culture with devolution by placing humans in a primitive state by destroying its social structure. Technology allowed humans to be the fittest, but in the face of the Rhedosaurus, weapons are useless.

Gojira reproduces similar imagery and leads to the same outcome of the dino-monster challenging humanity's place as the pinnacle on the Ladder. However, Honda faced a challenge in developing *Gojira*: establishing Japan as a nation with a prehistory. As previously mentioned, until the end of the Second World War, the Japanese government taught Shinto creationism through *kokutai*, meaning *Gojira* needed to justify the presence of a dinosaur on Japanese national soil and render the country as one with a savage prehistory. Odo Island, where locals worship Godzilla as a sea-monster god, is used to this end. Japanese officials state in the film that Odo Island and Godzilla's territory exist within Japanese territorial waters early in the film and that the Odo natives have known about Godzilla for centuries. Therefore, the dino-monster comes from Japan. Godzilla's natural habitat, part of the Japanese nation-state, immediately defies the creationist ideology of the *kokutai*. *Gojira* shows Japan as a land where prehistoric animals roamed before humans occupied it, denying the divine and harmonious origins of Japan

and its people. When Godzilla appears, he destroys both their rebuilt urban centers and crushes their war engines, further establishing that humans may not be the rightful owners of the land. Godzilla is seemingly the fittest when he enters conflicts with humans, creating tensions stemming from the fear of the evolutionary origins of Japan and the fear of devolution.

Establishing Godzilla as an indigenous Japanese species questions traditional interpretations of the film. Godzilla is certainly a metaphor for the bomb, and the invading American forces dropped the bombs. With these pieces of information in mind, other scholars, such as Chon Noriega in "Godzilla and the Japanese Nightmare: When 'Them!' is U.S.," claim that the film views Godzilla as an invader, a metaphor for the American Other (64). However, as *Gojira* goes to great lengths to show, Godzilla comes from Japanese territorial waters, and he lived near an island that is part of the Japanese nation-state. The threat of devolution comes not from outside but from within.

The myths, however, need to see the dragon destroyed. Order must return to the social structures of both the U.S. and Japan, and humans need to be the top of the Ladder. While both films recognize evolution and prehistory, the films utilize progressive evolution. Humans still evolved, but they are separate from the rest of nature because of humanity's creation of culture and technology, giving them dominion over the land. The films handle the destruction of the dino-monster in similar ways, with the scientist-hero devising a superweapon that can destroy the monster. However, each film approaches the repercussions of these weapons in vastly different ways. In *The Beast*, Nesbitt utilizes a radioactive isotope stored in the grenade. The isotope, through some obscure biological process, will kill the monster instantly while ensuring the contagion does not spread. Humans manage to utilize technology to kill the monster, proving that, despite the initial threat of the dinosaur, their place on the Ladder was only challenged

temporarily. In regards to the conflict of devolution caused by the atom bomb, *The Beast* shows that the nuclear genie can be placed back into the bottle so long as one uses technology and science correctly and humanely like Nesbitt does. However, the humane use of nuclear science is only to be used in the worst possible circumstances with little rumination on the threat a weaponized radioactive isotope could pose.

Gojira uses technology and science to kill Godzilla as well, cementing humans at the top of the Ladder. The human characters push prehistory back to where it belongs: the past as represented by Godzilla's bones. The Oxygen Destroyer dissolves Godzilla into bones that eventually disappear at the bottom of Tokyo Bay. The recognition of Japan's prehistory and the evolutionary past of humanity, despite using progressive evolution and the Ladder to place humanity at the top, comes at a price for Japan. Serizawa, unlike Nesbitt, does not practice blind scientism. He is aware of the dangers that the Oxygen Destroyer can pose to humanity as a "terrifying new weapon." This drives Serizawa to commit suicide as he activates the Oxygen Destroyer – he would rather he die than see his invention potentially weaponized. Using the Oxygen Destroyer has an additional unwelcome side effect on the Japanese people: it kills all of the sea life in Tokyo Bay, rendering it a graveyard and crippling the local fishing economy. Resolving the conflict with Godzilla means a great sacrifice is required, which plays into the nuclear metaphor. *Gojira* recognizes that scientific advancement facilitates cultural progress and evolution, but such advances also challenge existing ideology (evolution) and could lead to the destruction of humankind (nuclear technology).

The Combative Dragon and the Struggle for Survival in *Godzilla Raids Again*

In the previous section, I analyzed how the traditional dragon-slayer narrative was updated into the dino-monster narrative, and in updating the narrative, encodes the narrative with

evolutionary themes. However, the dragon-slayer narrative is not the only element from traditional dragon lore that dino-monster movies have adapted and charged with evolutionary themes. In traditional dragon imagery, a motif exists that I dub the "combative dragon," which pervades various types of mediums, such as artwork, bestiaries, and narratives. This motif involves a dragon engaged in mortal combat with another animal. The combative dragon motif is most apparent in the Western dragon tradition, but it is not wholly absent from the Japanese dragon tradition.

The combative dragon motif appears in a variety of different medieval European sources. For example, Chrétien de Troyes' *Yvain, Knight of the Lion* (ca. 1170 C.E.) features an episode in which the knight Yvain encounters a dragon attacking a lion. A near identical episode appears in *Mort d'Arthur* by Thomas Malory, but the knight is Sir Percivale as opposed to Yvain. The lion is not the only animal that falls victim to the dragon's combative habits. The image of the dragon fighting an elephant is exceptionally common in a multitude of medieval bestiaries, such as the Aberdeen Manuscript, MS Bodley 764, and *The Etymologies of Isidore of Seville*. *The Etymologies* describes the dragon as the aggressor in this conflict: "Even the elephant with his huge body is not safe from the dragon, for it lurks around the paths along which the elephants are accustomed to walking, and wraps around their legs in coils and kills them by suffocating them." (Isidorus 255). Other bestiaries recycle this fight similarly. The dragon in Western lore is a combative beast not just with humans but also with the wilderness around it, perhaps because it is "that largest of all the snakes, or of all the animals on earth" (Isidorus 255).

Similarly, the Eastern dragon tradition paints that dragon as a figure engaged in conflict. M.W.D. De Visser, in *The Dragon in China and Japan*, claims that the Indian naga and Buddhism influenced the dragon in those countries. He states that the Japanese "did not hesitate

to believe in the truth of [the Chinese] assertions also in regard to the appearance of dragons" (Visser 146). The combative dragon appears in Chinese lore, such as dragons fighting each other, said to be the cause of massive calamities (Visser 45-49), or, more famously, the dragon fighting the tiger. Visser notes that "the tiger [is] the dragon's deadly enemy" (119). The reason behind this comes not from the dragon's predatory instinct or need to fight, as it does in the West, but instead, because the dragon and tiger are symbols of Yin and Yang from Daoist belief (Visser 114). While the metaphysical and symbolic reason for the combative dragon is different in China and Japan than in the European tradition, the Japanese, in importing Chinese dragon lore, are not unfamiliar with the image of the dragon fighting another animal.

The combative dragon motif is translated into Darwinian monster narratives, where the primary monster is triumphant over other monstrous animals (*Immortal Monster* 97). Darwinian thematics dictates that this combat and triumph over lesser monsters denotes the winner monster as an entity linked to and different from the other monsters it destroys (Immortal Monster 97). This linkage and separation occur because of the social Darwinian struggle for survival which dictates that the fittest (often the strongest) will win out over other animals (Gould 137). Often the struggle is violent, ending with the death of the weaker animal. Carroll calls this struggle for survival an archetypal moment for dinosaur narratives, something that augments the Darwinian themes in stories about prehistory ("Ape and Essence" 120). In paleoart, this struggle for survival manifests with the Savage Rex archetype, where the *T. rex* is battling a *Triceratops* or another dinosaur. The Lordly Rex's position as the confident, battle-hardened ruler of the Cretaceous comes from his ability to dominate any challenge that comes his way. During their respective eras, artists portrayed The Savage Rex and Lordly Rex as the fittest in their environments.

The second Godzilla film, *Godzilla Raids Again* (*Gojira no gyakushu*), is a Darwinian dragon tale that brings the struggle for survival onto Japanese soil much in the same way *Gojira* rendered Japan a nation with prehistory. Initially, Toho never intended for Godzilla to return (Kalat 36). However, *Gojira* was a financial and cultural success, leading Toho to start immediately on the production of a sequel (Ryfle and Godziszewski 106). The result was *Godzilla Raids Again*, which was released a mere six months after *Gojira* premiered. While it was not directed by Ishiro Honda, the film's director Motoyoshi Oda was also an apprentice under the same director Honda apprenticed under, Kajiro Yamamoto (Kalat 37). Kalat believes this led to some similarities between Honda's style and Oda's style (37). Despite the difference in director, many of the creative forces behind the film were the same. Eiji Tsuburaya returned to helm the special effects, and writer Shigeru Kayama returned to write the story (and novelization) for *Godzilla Raids Again*. The thematic similarities between *Gojira* and *Godzilla Raids Again* come from the creative team behind each film, which included the same individuals sparing Honda.

At the heart of the movie's narrative is a story about "the terror of living during wartime, about the struggle to find courage during a crisis, about love, about putting normal life back together again" (Kalat 41). *Godzilla Raids Again* is about the survival of people during a crisis, which on one level, is a metaphor for war. Godzilla and his rival dino-monster Anguirus are metaphors for the terrors of war, but as seen with previous examples, the prehistoric form these metaphors take also bring in messages about evolution. *Godzilla Raids Again* augments the social Darwinian struggle for survival by using Godzilla and Anguirus to reproduce a common trope in dinosaur paleoart.

At the beginning of the movie, protagonists Tsukioka (Hiroshi Koizumi) and Kobayashi (Minoru Chiaki) witness Godzilla fighting another monster on a fictional island known as Iwato. In a scene similar to *The Beast*, Tsukioka and Kobayashi skim through books on dinosaurs and other prehistoric life, attempting to identify the creatures they had seen. The two are sure that they saw Godzilla, but they are unsure about what the second dinosaur was. Eventually, Kobayashi identifies the second dinosaur, an *Ankylosaurus*, also known under the fictional name of Anguirus. A scientist in the room states that Anguirus is "an atrocious, carnivorous dinosaur…also, Anguirus is aggressive against other species." It is interesting to note that classification of the *Ankylosaurus* and its description as an aggressive carnivore are a contradiction, as the real *Ankylosaurus* was an herbivore and possibly docile in temperament. However, the film converts the dinosaur into a monster, turns it into a carnivore, and supersizes the beast, rendering Anguirus a dinosaur that shares some physical characteristics with the dragon, such as pronounced canines, claws, and a spiked crest.

Anguirus' form recalls specific species and scenes from paleoart. Despite being identified as an *Ankylosaurus*, his head has a spiked crest and nasal horn similar to that of a *Triceratops*. Pairing this ankylosaur-ceratopsid hybrid form next to Godzilla's tyrannosaurid-hybrid form recalls a specific trope from paleoart known as the Rex Battle, as coined by Debus in *Prehistoric Monsters*. This trope involves depictions of the *Tyrannosaurus rex* battling other creatures, more often than not the *Triceratops* (*Prehistoric Monsters* 179). Utilizing this trope is no coincidence because Eiji Tsuburaya often pulled from paleoart to create his monster designs and images (Ragone 44). Reproducing a prehistoric struggle for survival on Japanese soil was intentional and has certain implications in regards to Japanese understandings of evolution because of *kokutai* ideology. [Good.]

Kokutai took issue with the struggle for survival because it supported individualism and challenged the harmonious nature of the Imperial nation-state (Godart 65). During the post-war period, Japanese intellectuals and biologists rejected natural selection and the struggle for survival due to conflicts with Shintoism (Godart 195). In addition to previous objections to the struggle for survival, other Japanese thinkers challenged it on Buddhist grounds, often citing pacifism and non-violence (Godart 151). However, *Godzilla Raids Again* works against this rejection of the struggle for survival, and with it, the Japanese exceptionalism and anthropocentrism that came with it. The film does this by giving Japan a prehistory, like the previous film, and suggesting a similarity between Japan and the remote island Iwato where Godzilla and Anguirus first appeared. Japan as a nation created by gods, and not by evolution, is questioned at the beginning of the film. While Iwato Island is not confirmed to be a part of the Japanese nation-state, it does bear a Japanese name, suggesting that it could be part of the Japanese nation. As a result, the prehistoric monsters occupy a piece of Japanese land, breaking down the myth of divine creation. Additionally, during a conversation with his fiancée Hidemi (Setsuko Wakayama) before Godzilla and Anguirus attack, Tsukioka tells her that Osaka is quiet as Iwato was, drawing a comparison between the prehistoric island and the Japanese metropolis. The film positions Japan as not only an arena where prehistoric predators invade human settlements during a vicious struggle for survival but also positions Japan as the place of origin for these monsters through Iwato Island. The humans and the dino-monsters struggle to survive on Japanese soil.

The dino-monster struggle ends with Godzilla defeating Anguirus, proving he is the most Savage and Lordly of Rexes. However, despite positioning Japan as a prehistoric land with an evolutionary past, the humans are still the fittest in the struggle. While the human characters are

initially passive about Godzilla and Anguirus before the rampage in Osaka (The military is not mobilized, instead trying to lead them away with flares), they are decidedly active when during the end of the film. Godzilla is found on an icy island called Shinko (once again, suggesting Japanese territory). Tsukioka and Kobayashi scout the area, and observe that Godzilla wandered into a deep valley with only one exit route. The two scouts inform the air force, and soon squadrons of planes begin to drop bombs on Godzilla. When Kobayashi flies too close to Godzilla, the radioactive leviathan blasts the plane with his atomic fire. Kobayashi's plane crashes into a mountainside, which causes a small avalanche that partially buries Godzilla. This inspires the air force to bomb the mountainsides that creates an icy tomb from which Godzilla cannot escape. The characters presume he will freeze to death. Once again, despite challenges to humanity's placement atop the Ladder, the combined forces of human strength and intelligence win against the prehistoric dino-monster. *Godzilla Raids Again*, despite questioning Japanese perspectives on evolution and the struggle for survival, still conforms to the status quo, placing the human over animal, reason over instinct.

Conclusion

The Beast from 20,000 Fathoms, *Gojira*, and *Godzilla Raids Again* resurrect the dino-monster and naturalize the dragon. However, the dragon that these films bring about is the Dragon of the Apocalypse, a monster that draws lines between a variety of different binaries. In these films, the binary exists in evolutionary terms, such as human/animal and evolution/creation. These films deconstruct certain cultural beliefs, such as the idea that evolution occurred in both the United States and Japan. However, while giving way to the idea of a prehistory and an evolutionary past, the films place the Ladder of Being over the Tree of Life and reaffirm that humans are the fittest in the struggle for survival. Even when the dino-monster turns human

settlements into arenas for this struggle, such as what Godzilla and Anguirus did to Osaka, humans still find a way to destroy the Dragon of the Apocalypse. Technology and culture assure humanity a place at the top of the Ladder.

In the next chapter, I will explore two more *kaiju* movies, *Gorgo* and *Ghidorah, the Three-Headed Monster*, that once again raise evolutionary questions. However, these films approach the dino-monster in ways that are different from the early films discussed in this and the previous chapter. Specifically, the films utilize what Andriano calls The Dragon of Eden. In utilizing this dragon, the films approach evolutionary theory from a different angle and rewrite the dragon myth so that it includes the Tree of Life.

CHAPTER IV. THE DRAGON OF EDEN: THE DINO-HERO AND THE TREE OF LIFE

Here was the occasion to repair my wrongs against the sea monster species!

- Eugène Lourié, *Gorgo – The Shooting Script and Novel*

Monsters are tragic beings. They're not bad [willingly]. They are born too tall, too strong, too heavy; that's their tragedy. They don't attack [mankind] voluntarily, but because of their physical dimensions they cause danger and grief; therefore man defends himself against them.

- Ishiro Honda, *Ishiro Honda: A Life in Film, from Godzilla to Kurosawa*

An odd occurrence happened during the early 1960s. The dino-monster soon became the dino-hero, with the naturalized dragon becoming the hero of the dragon-fight narrative. In this chapter, I shall explore two films that throw the dino-monster narrative on its head: *Gorgo* and *Ghidorah, the Three-Headed Monster.* These dino-hero narratives use the Dragon of Eden archetype, defined by Andriano as a dragon that "takes the creature out of the realm of the monstrous and acknowledges our kinship with other animals, our common ancestry with reptiles and raptors, and our recognition that all human races are one" ("Monsters of the Fantastic" 279-280). *Gorgo* and *Ghidorah* challenge the Ladder of Being, progressive evolution, and Social Darwinism. Instead, the films favor the Tree of Life, which shows the relationship between all animals, and is non-hierarchical. Here, all life is related, each species as a bough that is related to other boughs, and stems from a common ancestor (Immortal Monster xiii). With this, the line between human and dino-monster is erased. In *Gorgo* and *Ghidorah*, *the Three-Headed Monster*,

human characters try to reinforce the separation between human and animals and impose the Ladder of Being, but the dino-monsters resist it by taking on the role of hero. Through these film's structures, dialogue, and characterization, humans are placed within the Tree of Life and own the evolutionary history of humans. Additionally, *Gorgo* and *Ghidorah, the Three-Headed Monster* utilize specific dragon-combat narratives popular in their respective regions to recast the dragon as a hero. In these films, the Dragon of Eden affirms the kinship all life shares and humans learn to accept and respect their placement on the Tree of Life instead of trying to impose the Ladder of Being upon it.

Reworking St. George and Evolving Grendel in *Gorgo*.

Eugène Lourié could not get a break from dinosaurs. After the success of *The Beast from 20,000 Fathoms*, various studios asked him to direct what he called "unbelievably bad" science fiction productions (Cooke 10). Along the way, in 1958, he was pressured into making *The Giant Behemoth*, which was essentially a remake/rip off of *The Beast*. The story was similar in that a sea dinosaur, rendered radioactive by contaminated fish, attacks London and is eventually killed by a radioactive torpedo. The characters were also extremely similar, such as the nuclear scientist protagonist and the doting paleontologist whose professional curiosity gets him killed. After this film, Lourié thought he was done with the dinosaur. However, this would not be the case.

Frank and Maurice King, owners of King Brothers Productions, approached Lourié to make another giant dinosaur movie. While the director liked the King Brothers and the larger production budget they were bringing to the table, Lourié still had reservations about making the film (Cooke 11). However, he relented and directed the movie *Gorgo*, released in 1961. The movie's plot borrows from different sources, such as Godzilla films, *King Kong*, and Lourié's previous dinosaur movies. The story follows two salvagers, Joe (Bill Travers) and Sam (William

Sylvester), who witness a volcanic explosion off the coast of the Irish island of Nara. The explosion damages their ship, and while they wait for it to be repaired, they wander about the town on Nara. There, they learn stories of a sea monster named Ogra from an orphan boy named Sean (Vincent Winters). Later in the evening, a giant dinosaur rises out of the sea and causes some minor havoc on Nara. The salvagers agree to catch the monster and promptly do so. Despite pleas from Sean and two evolutionary biologists, Joe and Sam sell Gorgo to a Dorkin's Circus in London. The circus names the sea dinosaur Gorgo, and the circus' monster exhibit is a smash hit. However, all is not well on Nara, where Gorgo's mother (called Ogra by fans, but referred to as Mama Monster in the production script) rises from the depths and tramples the village. Ogra heads to London, where she also tramples the British military and frees Gorgo from his bondage. The two dinosaurs wade into the Thames while a destroyed London looks on, the human characters humbled by nature's awesome might.

In the catalogue of monster films, especially those involving dinosaurs, *Gorgo* plays with preconceived notions of monstrosity. Particularly, the film is among the first to introduce a rampaging dinosaur who does not die at the end of the film and gives the dinosaur a relatable motivation. Lourié made this decision because of a comment his daughter made after seeing *The Beast*, when she tearfully complained that her fathered killed "the big, nice Beast," and the director sought to do right by the sea monster species (*Dinosaurs in Fantastic Fiction* 78). Another goal Lourié had in mind was to buck the trend of nuclear metaphors and imagery (Cooke 11), which modifies the meaning and themes of *Gorgo*. Removing the nuclear message renders *Gorgo* as a film about ecological and animal exploitation. The film, however, still relies on tropes that we previously discussed, such as rendering the setting one of prehistoric and natural selection and calls into question progressive evolution. *Gorgo* does this by modifying two

popular Western dragon narratives – "St. George and the Dragon" and *Beowulf* – to be stories about evolution and humanity's place in nature.

The similarities between "St. George and the Dragon" and *Gorgo* are apparent once one knows the exact story of the hagiographical tale. The summary of this story comes from *The Golden Legend: Or, Lives of the Saints, Volume 3* by Jacobus de Voragine (126-128). It begins in Silene, a city in Libya, where a dragon living in a body of water wreaks havoc upon the land with its poisonous breath. Offerings of sheep sated the dragon for a time, but the dragon soon demands a man and a sheep, and then eventually just humans. Lots are drawn, and the king's daughter draws the dragon lot. Shocked and desperate, the king requests eight days before his daughter is sacrificed. The citizens of Silene warn the king that if he does not give up the princess, they will burn his house to the ground. After eight days, the king relents and sends his daughter to the dragon. On her way, she encounters St. George, who comes to her assistance despite her requests that he should ignore her. The saint battles the dragon, and after wounding it, uses the princess' girdle as a collar and leash for the dragon. The dragon, miraculously tamed by St. George, is escorted through the streets of Silene. The citizens fear the beast, but St. George claims that if the citizens convert to Christianity, he will slay the dragon. The coercion works, the citizens convert, and St. George cuts off the head of the dragon. Because the body of the dragon is so large, it takes four carts drawn by oxen to take it out of the city.

The immediate parallels to *Gorgo*, such as the dragon and dino-monsters both residing in bodies of water, are apparent. While the dragon plagued the city of Silene for some time, Gorgo only assaults the Nara village once before being captured. As there are no sacrifices to Gorgo or Ogra in the form of sheep or people, the sea dinosaurs present a threat to society not through their ability to depopulate the city on a personal level, but instead, crush cities on a largely

impersonal level. What separates Gorgo and Ogra from a more traditional dragon is a matter of intent – the dragon seeks to prey upon humanity while the dino-monsters merely wade through human cities, apathetic towards the present citizens. Neither Ogra nor Gorgo possess preternatural abilities, such as fire breath or poison, but the film does provide an interesting analogue. The salvagers note that wash off from Gorgo (they must have running water on him at all times) is phosphorescent, meaning the sea dinosaurs excrete some form of phosphorous. It is this chemical that Ogra uses to track her child. Finally, Gorgo's public display at Dorkin's Circus parallels St. George's public display of the dragon in Silene.

The relationship between *Gorgo* and *Beowulf* resides not in immediate plot similarities, but the particular motivations of the monsters prominent in both the epic and the movie. The first parallel is between Grendel and Gorgo. While *Beowulf* portrays Grendel as a descendant of Cain and demonic monster, the monster is violent because of the pain he suffers caused by the music at Herot. When killed by Beowulf, his severed arm is put on display in Herot. While it would be hard to call Grendel a victim, as he murdered many people over the years, Gorgo can be characterized as a victim. His appearance at Nara Island seems driven by curiosity, not because the humans have caused him harm. Instead, the film leads viewers to infer that the volcano that disturbs the sea floor in the beginning of the film is responsible for his appearance. When Joe and Sam head out to Nara after their ship stalls, strange, dead fish (poorly-made props, really) are seen floating on the surface of the water. The two muse that the volcano stirred up ancient, prehistoric lifeforms from the sea floor, strengthening the link between Gorgo and the volcano. Now, Gorgo does act aggressively when confronted by the citizens of Nara. The aggression he displays is a result of the Nara villagers' assault against him. Gorgo's later violence stems from cruel provocation by circus workers with cattle prods and flamethrowers. So, much like Grendel,

Gorgo's violence comes not from some malevolent psychology, but instead, as a reaction to pain inflicted upon him. The human characters eventually capture the monsters and display them in some form, be it Grendel's severed arm or Dorkin's Gorgo exhibit.

Similarly, Ogra parallels both Grendel's mother and the *Beowulf* dragon. The parallel to the dragon is simple: as a cup was stolen from the dragon's hoard, so was a child stolen from Ogra. However, Ogra's motivation best matches Grendel's mother, as both assault human civilization not because of a malevolent nature, but because their children have been stolen from them; Beowulf kills Grendel, and Joe and Sam take Gorgo to London. When Ogra makes her way to London, she confronts the British Navy. Following generic tropes, the navy does not stand a chance against her might. Similarly, the British Army cannot handle Ogra's might, and she crushes historic and popular wards of London along the way. Interestingly, though Big Ben is destroyed in her rampage, it is not by her, but rather, a military that fires rockets through the building. After she retrieves Gorgo from his holding pit, the two dino-monsters immediately leave London. They do not rampage or destroy any more of the city. While Grendel's mother's behavior is not a 1:1 match, the similarities are unmistakable. She invades Herot and takes back Grendel's arm. While Grendel's Mother does intentionally murder Hrothgar's favorite warrior, the deaths in Ogra's rampage are unintentional as the destruction and death she causes are a result of her gigantism.

Identification and sympathy in *Gorgo* do not fall on the human characters. Altruistic behavior does not motivate the protagonists, but instead, greed does. Initially, Joe and Sam agree to capture Gorgo only because the people of Nara are willing to pay them. After capturing the monster, they ignore the pleas of Irish evolutionary biologists, who want to research the monster, after choosing to sell the dinosaur to Dorkin's Circus. The orphan Sean even sneaks aboard the

protagonists' ship in an attempt to free Gorgo, but when caught, the men do not listen to Sean's warnings about the doom Gorgo signifies. Dorkin's Circus parades Gorgo around not because, like St. George, they wish to convert anyone to some ideology, but instead, to generate revenue. The human characters in this film, sparing the orphan Sean and the Irish scientists, are not the heroes seen in previous monster films. Any altruistic behavior they have is *post facto*, when Sam feels guilty for selling Gorgo and when Joe must save Sean from the destruction wrought by Ogra. They possess no positive qualities until they realize that they created this threat to civilization.

Like dino-monster movies before it, *Gorgo* recycles tropes and images from both paleoart and dragon iconography, effectively naturalizing the Grendelkin and the St. George dragon and *Beowulf* dragon. For example, a popular background prop in paleoart, an exploding volcano, initiates the action of the plot in *Gorgo*. The iconographic combative dragon seen in medieval bestiaries and reproduced in various monster films appears in *Gorgo* as well. While it was cut from the final version of the film due to budgetary constraints, in both the production script and novelization of the movie, Gorgo easily slays and consumes a killer whale during Joe and Sam's first encounter with the dinosaur underwater. Similarly, the combative dragon trope is reproduced in yet another cut scene. When Gorgo is brought to Dorkin's Circus, the presence of the sea dinosaur agitates the other animals. This drives an elephant mad, and the pachyderm attacks Gorgo. After a brief struggle, Gorgo kills the elephant. As mentioned in the previous chapter, this scene is important as it positions the dino-monster, much like the dragon, as a dominant animal in its ecosystem. This also places Gorgo and his mother in the Lordly Rex archetype as they are rulers of their domains, and traditional apex predators in an ecosystem, such as a killer whale, must submit or die under the lordship of the Rex. This is true for the fight

with the elephant as well, which the script calls "the struggle of the giants," recalling both the dragon/elephant motif and the struggle for survival simultaneously. The designs of both Gorgo and Ogra rely on the general imagetext of a *T. rex*, as their designs are a fusion of theropod dinosaur, crocodile physiology, and massive forepaws unique to the monsters.

The setting of the film, the United Kingdom, is particularly interesting because of its relationship with dinosaurs. *The Beast* and the Godzilla films needed to work against the hegemonic beliefs about evolution in both the United States and Japan; this is not the case in the United Kingdom. British scientists started finding fossils of prehistoric animals, particularly marine reptiles and dinosaurs, in the 18th century. The first dinosaurs identified, the *Iguanodon* and the *Megalosaurus*, were discovered in England. Because of this, research and popular interests in prehistoric reptiles and dinosaurs exploded in the early 19tr century, which culminated with the gigantic dinosaur statues at the Crystal Palace (*Prehistoric Monsters* 117-126). Thus, the United Kingdom has a long history with dinosaurs, and popular culture depicted this history with its obsession over prehistoric life. Rendering the British nation-state as a land where dinosaurs belonged did not take the naming islands with Japanese names or expository dialogue from paleontologists. Instead, all it took was a volcanic eruption to signal prehistory, and then the appearance of the monster itself.

While *Gorgo* recycles familiar story elements, it also introduces new ones, and this modifies the evolutionary themes within. Previous dino-monster movies often portrayed the monsters as mindless aggressive and malicious beasts or dimwitted animals that lumbered about. As the progressive evolutionary model would dictate for extinct animals, they were meant for extinction, and their existence in the 20th century threatens humanity. They had to be destroyed. *Gorgo* throws this idea out of the window. While dino-monsters do come to destroy human

settlements, Ogra only does so because humans forced her to participate in their destruction. Her motivation is that of a mother that had lost her child. Such parental motivations are absent in previous depictions. Interestingly, *Gorgo* predicts a major discovery in paleontology that would come nearly two decades after its release. In 1979, paleontologists Jack Horner and Robert Makela published the article "Nest of Juveniles Provides Evidence of Family Structure among Dinosaurs" in *Nature*, where they outline how a hadrosaur named *Maiasaura* ("good mother lizard") formed nests and engaged in both parental and social behavior. This discovery began reevaluations of how we understood dinosaurs as social animals. In showing Ogra as a parent that cares for her child, *Gorgo* manages to predict actual paleontological discoveries but also manages to reevaluate the dino-monster. The dino-monster is no longer a marauding monster, intent on destruction, but rather, a parent who cares for its child and wishes to protect the child at any cost.[20]

Gorgo does not leave the parental heroics to the dino-monsters. During the last act of the movie, Ogra's rampage, two parallel subplots occur simultaneously. Sean, who accompanied Joe and Sam during their voyage from Nara Island to London, came under the two salvagers' care. The child is immensely interested in Gorgo and acts as the human parallel for the monster. Like Gorgo finds himself, Sean finds himself separated from his parental figures. This parallel characterization breaks down the wall that separates human from animal. When Ogra begins her assault on London, Joe realizes that Sean is stuck in the heart of the rampage, and goes to save him. Joe's quest to save Sean is a change in the latter's character, as he was previously ambivalent towards the child. The previously selfish salvager's struggles even mirror Ogras: he

[20] A pure coincidence, but when the evolutionary biologists warn Joe and Sam of the possibility of Gorgo's mother, and her potential size, they use skeletal drawings of a *Camptosaurus*, which belongs to the suborder Ornithopoda, the same as the *Maiasaura*.

must fight his way through the mayhem caused by fleeing Londoners just as Ogra confronts the British military. When Joe does save Sean, Ogra does not cause the danger they face during their escape. Instead, the danger is provided by the humans around them, the fleeing crowd that threatens to crush man and child. The structure of the film itself calls for us to rethink the relationship between dino-monster and human, as both are guided by the wish to save a child.

These parental heroics displayed by the human characters in *Gorgo* presents a shift in how the human characters are thought of in dino-monster narratives. There are no scientist-heroes in *Gorgo*, and the scientists that appear are merely backgrounded characters used to deliver knowledge about the dino-monsters. Instead, the protagonists, Sam and Joe, straddle the line between hero and villain. About three-fourths of the film presents Sam and Joe as characters seeking to capture Gorgo because they see a profit in the monster and decided to sell him to Dorkin's Circus. These human characters are exploitative, and generally, uncaring towards others. They are the Carl Denhams of the movie, the eager filmmaker from *King Kong* who captures the giant ape and makes a show out of him (Cooke 12). In the production script for the movie, Sam and Joe are portrayed differently, with Joe being the greedier and more callous character and Sam being the conscience. Sam wises up, however, and realizes how awful his exploitation of Gorgo is and turns into an alcoholic briefly. This portrayal of the heroes as greedy and callous humans has interesting implications for Darwinian themes in the film, be they biological or social.

If the presence of Ogra is meant to challenge humanity's dominance and devolve humans socially by destroying urban centers, then the human characters need to exhibit positive behaviors, such as altruism and care for others. However, this is not the case for the majority of the film. The protagonists possess altruistic traits only after Ogra reveals herself and threatens

humanity. The inhuman behavior of the characters, with their care only for personal wealth, reduces human civilization to that of greed and exploitation. Everything the humans can monetize belongs to them, even nature. Ogra balances these scales by coming through and destroying humanity's cities and war engines, reminding humans they are not separate from the natural world. As the Dragon of Eden, Ogra shows the connection between humanity and nature, and she does not care about wantonly destroying human civilization. Instead, her only motivation is to save her child, and once she does so, both she and her child leave London and return to the depths of the ocean. These dino-monsters do not present a constant threat to humanity, but instead, show that humanity's dominance over nature is an illusion. By destroying parts of London and destroying the exploitative Dorkin's Circus, Ogra's actions cause the protagonists to "evolve" in that they develop compassionate feelings and realize the relatedness between humans and humanity's place in the natural world.

***Ghidorah, the Three-Headed Monster*, or the Dragon of Eden vs. the Dragon of the Apocalypse**

Between *Godzilla Raids Again* and *Ghidorah*, Toho released other *kaiju* films that did not involve Godzilla: *Rodan* (Honda, 1956), *The Mysterians* (Honda, 1957), *Varan* (Honda, 1958), and *Mothra* (Honda, 1961). These films, all of varying quality, experimented and refined the *kaiju* narrative, and by 1962, Godzilla had returned to the silver screen, this time fighting King Kong, the exemplary American monster. *King Kong vs. Godzilla* lacked the explicit allegorical heft that typified previous Toho monster movies and focused on pure entertainment (Kalat 44). The film was a cultural and financial success, being rereleased multiple times in both the 1960s and 1970s, and was the highest grossing Godzilla film until 2016's *Shin Godzilla* (Ryfle and Godziszewski 191; Blair). Toho learned that monster-against-monster films were extremely

popular and soon started producing Godzilla films on an almost-yearly basis until 1975. Two years later, in 1964, audiences saw the next monster-against-monster movie, *Mothra vs. Godzilla*, which pitted the giant insect demi-god against the prehistoric leviathan.

While these films are both thematically and historically important, they will not be analyzed in great detail in this thesis for three reasons: (1) King Kong and Mothra's speciation, (2) Godzilla's role as antagonist, and (3) the shift in theme away from explicit nuclear and evolutionary contexts. As mentioned previously, creators of the Rhedosaurus, Godzilla, Anguirus, and Ogra designed the monsters in a way that elicits a response from humanity's evolved biases, as they possess supernormal predatory traits. King Kong and Mothra are different in this regard. As a gorilla, Kong is closer to a human in a folk taxonomic sense and in a recognized evolutionary sense. Other arguments, such as the ones present in Cynthia Erb's *Tracking King Kong*, discuss the connection Kong has to humanity, especially the racial themes. Mothra is a monster of a different order, as her clearly insectoid inspiration is farther removed from humanity than the primate Kong or the dinosaurian Godzilla. Yet, she falls into the role of protagonist more easily than Godzilla because her design appears more mammalian than Godzilla and is less threatening; her fuzzy body and big eyes make her appear cuter and belies her insectoid nature. Comparing Kong and Mothra to Godzilla, who retains his dinosaur form, and often sports either more lizard-like features (*King Kong vs. Godzill*a) or generally aggressive features (*Mothra vs. Godzilla*), it is easy to see how Godzilla becomes an antagonist in these films, as he opposes either a creature more humanoid than him or cuter than him. Despite the presence of other monsters in these films, the relegation of the dino-monster to antagonist continues the over-arching theme present in past reptilian monstrous narratives, the suppression or destruction of the reptile.

The central themes in both *King Kong vs. Godzilla* and *Mothra vs. Godzilla* do not concern themselves with overt nuclear or evolutionary messages of the previous films. These films borrow plots and themes from a Japanese novel genre known as *keizai shosetsu*, or business novels (Ryfle and Godziszewski 186). Novels and films that belonged to this genre often spoofed the ruthless Japanese business practices of the period (Ryfle and Godziszewski 186). While *King Kong vs. Godzilla* does invoke evolutionary images, as it positions ape against dinosaur as its central and marketed conflict, Godzilla does not pose the threat of devolution or extinction like his previous incarnations. While he does destroy military installations and weapons and crushes a train, the Japanese Defense Force has an easy time containing him. The protagonists of the film soon devise a plan to combat Godzilla. A buffoonish Japanese television executive captures Kong and sends him to Japan to fight Godzilla as a marketing ploy because of concerns over his declining ratings. Despite the ridiculous reason to bring Kong to Japan, the plan works, and the giant ape drives Godzilla away. *Mothra vs. Godzilla* also features conniving businessmen, though they are ruthless corporate executives and financiers interested in buying Mothra's egg after it washed up on Japanese shores after a typhoon struck both Japan and Infant Island, Mothra's home. The film addresses themes of ownership and business, and which climax during conflict between the two executive antagonists in the film, brutal men willing to kill each other. While *King Kong vs. Godzilla* and *Mothra vs. Godzilla* do utilize both evolutionary images and anti-nuclear rhetoric at times, these are merely vehicles or props through which critiques of unchecked capitalism travel.

Ghidorah, the Three-Headed Monster (hereafter *Ghidorah*) is the immediate sequel to *Mothra vs. Godzilla*, picking up where the previous film left off. Two intersecting plots make up the core of the film: the investigation into a strange meteor that crashes in the Hida Mountains

and the protection of an international princess from would-be assassins. Detective Shindo (Yosuke Natsuki) is assigned to guard Princess Salno (Akiko Wakabayashi) of Selgina, a fictional country in the Himalayas. Shindo's sister, Naoko (Yuriko Hoshi), is a reporter working with Professor Murai (Hiroshi Koizumi), who is investigating the crashed meteor. Before Shindo can meet the princess, her transport plane is destroyed in an explosion arranged by a rival faction in the Selginan government. Later, Shindo and Naoko discover Salno alive, but she is dressed in rags and spouting prophecies about the destruction of Earth, the return of Rodan and Godzilla, and ominous warnings about an entity called King Ghidorah. Additionally, she claims to be from Venus and explains that Venusian civilization was destroyed by King Ghidorah 5,000 years ago. Salno's enemies in Selgina soon learn of her survival and send Malness, the assassin that killed Princess Salno's father, to kill her. While these events transpire, Godzilla and Rodan return to wreak havoc and King Ghidorah emerges from the meteor that Murai was researching. The *Shobijin*, Mothra's fairy priests, appear and summon Mothra in an attempt to battle King Ghidorah. The film's climactic battle pits Godzilla, Mothra, and Rodan against King Ghidorah, the world destroyer.

Ghidorah has many plot threads that crisscross at different angles and edges, but it does something subtle with traditional Japanese mythology. It infuses the mythical fight between the storm god Susanoo and the polycephalous dragon Yamata-no-Orochi with evolutionary imagery and relies on the changing cultural perceptions of nuclear technology and evolutionary theory to position Godzilla as the hero. In casting Godzilla and Rodan as dino-heroes, the dino-duo morph into Dragons of Eden, as they suggest a connection between humans and animals and shirk the concept of progressive evolution and the Ladder of Being. The film does introduce a Dragon of the Apocalypse through King Ghidorah, but this monster is slain not because the dragon is

naturally an Other, but because, much like the human heroes have human antagonists to fight, the dino-heroes have a monster to slay. *Ghidorah* is about the Dragon of Eden slaying the Dragon of the Apocalypse.

Susanoo's fight against the dragon Yamato-no-Orochi, present in both the *Kojiki* and the *Nihongi*, is popular in Japanese culture. For example, Toho has produced three film versions that either retell the myth or borrow heavily from it: *The Three Treasures* (Hiroshi Inagaki, 1959), *Yamato Takeru* (Takao Okawara, 1994), and *Onmyoji II* (Yojiro Takita, 2003). The *Kojiki* and the *Nihongi* versions of the story are roughly the same, only diverging in the smallest of details. The episode begins with a storm god Susanoo-no-Mikoto traveling on Earth for the first time. In the *Kojiki*, he sees a chopstick floating down the River Pi in Idzumo province (the chopstick is not mentioned in Aston's translation of the *Nihongi*. Instead he hears wailing in the distance). Up the river, his finds an old man and old woman crying over a young maiden. Susanoo learns from the old couple that a terrible dragon known as Yamata-no-Orochi has been terrorizing the land, demanding sacrifices in the form of maidens. The old man and woman, two earthly deities, sacrificed seven daughters to Orochi so far, and are now lamenting that they shall soon have to sacrifice their last daughter, Kushinada-hime. Susanoo says he will kill the dragon if he may marry their last daughter. The deities agree and the storm god has them brew eight barrels of sake – one for each of Orochi's heads. The dragon finds the sake and drinks it, and falls asleep drunk. During Orochi's slumber, Susanoo cuts off each head of the dragon. After cutting off one of the dragon's tails, he finds the sword known as Kusanagi, one of three legendary regalias of Japan.[21]

[21] See Philippi 88-90 for the Kojiki version and Aston 52-53 for the Nihongi version.

The Orochi myth, and the handful of other dragon-combat stories in Japanese mythology, often positions the dragon against a human or a god. This produces an implicit hierarchy, one where gods sit at the top, humans below them, and the dragon below the humans. In such a situation, the dragon will always die because it exists below the gods and humans. When the divine is included in these dragon myths, this hierarchy becomes teleological. In updating the Orochi myth for the 20th century, and by including evolutionary themes, one would expect this teleological hierarchy to appear as progressive evolution. However, *Ghidorah* eschews this notion for a more complicated understanding of evolution, and by doing so, disregards previous notions of progressive evolution and the Ladder of Being.

Despite being a science fiction film, *Ghidorah* introduces elements that are generically construed or interpreted as "the divine." The inclusion of an alien species in *Ghidorah* is not new for a science fiction film, be it American or Japanese, but it is new for a *kaiju* film. Instead of mining prehistory for images and ideas for evolution, which bring up notions of extinction and savagery, the usage of an alien species in *Ghidorah* conjures a different set of evolutionary ideas and images. The alien, as a trope, reflects ideas of progressive evolution, be it the evolution biological or cultural (more often than not, it is both forms). In this regard, if a dino-monster is a naturalized dragon, the Venusians are a race of naturalized deities, organisms that possess fantastic abilities through evolution. The Venusians present in *Ghidorah* are visually absent as a species, but instead, the spirit of one possesses Princess Salno, a human of Venusian descent.

As the Venusian Prophetess, Salno provides expository information about her extinct ancestors. 5,000 years before the events of the movie, a prosperous and technologically advanced civilization flourished on Venus. The aliens evolved mental abilities far superior to that of humans, including prescience and instant language comprehension, shown by the possessed

Salno's ability to predict the returns of Rodan and Godzilla and the ability to read German without previous knowledge of the language. Venusian civilization would not last, though. King Ghidorah arrived on Venus and rendered it "a dead planet forever." Surviving Venusians flew to Earth and assimilated into the human population, which led to a reduction of their superior abilities. Salno's retelling of Venusian extinction heavily implies a notion of devolution, as the "superior" Venusians devolve into humans that can sometimes tell the future.

The progressive conceptualization of evolution collapses under the 30,000-ton weight of King Ghidorah, the film's spectre of extinction. In spite of Venusian claims of technological and biological superiority over humans, the aliens could not fend off King Ghidorah, the destroyer of worlds. The golden dragon's presence in the film results in complications for evolutionary themes in a variety of ways. A cursory reading of King Ghidorah's presence and the pressure he exerts on Venusians illustrates the alien species was not "the fittest," dooming them to extinction. Following this logic, humans, a species less technologically and biologically advanced than the Venusians, are also doomed to extinction. Yet, by the end of the film, humans survive King Ghidorah's attack on Earth. Ergo, according to the simple reading, humans are fitter than the Venusians, turning the alien-as-more-evolved theme on its head. This reading King Ghidorah collapses due to the human characters' passivity. In *kaiju* films, the military often flexes its muscles before its destruction by the monster. The military has seemingly atrophied in *Ghidorah,* and the only military action pondered is the use of atomic weaponry against the monsters. The passivity of the humans puts them in a position similar to the Venusians – neither is fit enough to survive competition with King Ghidorah. If *Ghidorah* promotes a progressive evolutionary model, then King Ghidorah marches at the head of the line as the epitome of evolutionary perfection.

King Ghidorah as the epitome of evolution is not the space dragon's thematic purpose, however. As will be outlined later in this chapter, King Ghidorah is not a teleological evolutionary endpoint. In the evolutionary cosmology of the film, which is a retelling of the Orochi myth, the space dragon is the embodiment of extinction. To understand this reframing of the myth in evolutionary terms, a brief discussion on its general meaning must be given some space. Recall back in the first chapter, I summarized mythologist Julien d'Huy's research that demonstrated the relationship between dragon-fight narratives from around the world. Since *Ghidorah* adapts the Orochi narrative, it takes on the themes present in the original texts, such as the binaries between culture and nature and human and animal. The Orochi myth uses tropes and archetypes, such as the use of the Storm God and Chthonic Serpent, that connects it to the *chaoskampf* ("struggle against chaos"). In his tome *How to Kill a Dragon: Aspects of Indo-European Poetics*, comparative mythologist Calvert Watkins outlines the Proto-Indo-European roots of *chaoskampf*, which sets up the dragon-combat myth as a binary that involves order/chaos, the ur-binary later modified by other cultures for different contexts. In this binary, the dragon represents chaos and the hero is order (Watkins 300). Thus, *Ghidorah* becomes a text where chaos and order conflict, but because of the presence of evolutionary themes, "chaos" changes.

Chaos in *Ghidorah* has been replaced by extinction, which is not a stretch for the symbolic image of the dragon. After all, Orochi and other dragons directly threaten other organisms around them. The key distinction between King Ghidorah and classical dragons is that the latter tends to threaten only human life, whilst King Ghidorah threatens all life, as indicated

by the possessed Salno claiming the space dragon turned Venus into "a dead planet."[22] By casting King Ghidorah as the Dragon of the Apocalypse, the film seems to be replicating the structure of previous films in casting the dragon, and all that it represents, as the Other. The presence of both Godzilla and Rodan in the film, who are the heroes (or, better matching their motivations, anti-heroes), complicates the assumption that all dragons are Others, however. Comparing their relationship to King Ghidorah, both morphologically and symbolically, will elucidate the differences between the monsters and present what can be described as the "reptilian heroic."

A passing glance at Godzilla, Rodan, and King Ghidorah will reveal a glaring distinction: Godzilla and Rodan are dinosaurs and King Ghidorah is a dragon. Godzilla's design in this film is similar to ones that appeared in previous films, his *T. rex*, *Iguanodon*, and *Stegosaurus* inspirations are still present. The suit used for the film is a slightly modified version of the suit used for *Mothra vs. Godzilla*, originally designed to be villainous and threatening. Rodan, by comparison, does not look as threatening in this film compared to the costume used in his 1956 premier. However, both are clearly prehistoric creatures that impinge on modernity. Godzilla and Rodan even emerge from locations have been used to symbolize prehistory in paleoart: Godzilla rises from the ocean and Rodan from a volcano. Like the previous films, *Ghidorah* signifies that Japan is a land with a prehistory, denying the creationism once again, by having Godzilla and Rodan emerge in Japanese territory. More importantly, at the end of the film, after King Ghidorah is driven off the planet by the combined forces of Earth's *kaiju*, Godzilla and Rodan do not leave the country, but instead, are shown watching the space dragon fly off in a shot mirroring the human characters watching the same event.

[22] As an example from this, the *mizuchi* episode later in the *Nihongi* (Aston 298-299) mentions that the dragon's poisonous breath killed humans, but ignores any environmental considerations.

King Ghidorah belongs to a taxonomy all his own. In fact, the golden space dragon is not taxonomically identifiable. As mentioned before, Godzilla's anatomical features are signifiers for other dinosaurs. The films identify Anguirus and Rodan as real prehistoric animals but also add predatory features to create a fusion monster. Mothra's taxonomic placement needs no explanation as it is in her name. What distinguishes the trio of Earth monsters are their naturalistic origins; Godzilla, Rodan, and Anguirus are naturalized dragons and Mothra is just a magnified moth. Compared to these naturalized monsters, King Ghidorah is a fusion figure that works against traditional classification, appearing to be a supernatural dragon. His three heads are a writhing snake-pit of Eastern dragons. His limb arrangement is also uncanny – viewers can recognize it as a dragon, but the wings do not look quite right. They are more fins than they are actual wings.[23] Ghidorah lumbers around on two legs, much like a wyvern, a type of dragon with two legs and set of wings. Ghidorah's name also suggests a hybrid of inspirations. Tsuburaya has noted that King Ghidorah was based on Yamata no Orochi (Kalat 77), but his name is similar to the Japanese pronunciation for "hydra" (*hyudora*, ヒュドラ). This Greek connection is intentional as well, as producer Tomoyuki Tanaka was inspired by the Hydra ("1970's Godzilla FX Director – Part 1"). Thus, King Ghidorah's connection to the Yamata no Orochi myth and the *chaoskampf* is not accidental. However, despite this intended connection to supernatural dragons, King Ghidorah is still a naturalized dragon. King Ghidorah is an alien monster, and by categorizing him as an alien, viewers can infer his evolutionary past because of his juxtaposition to the Venusians, an alien species with a confirmed evolutionary past.

[23] Interestingly, King Ghidorah's wings resemble artistic representations of the wings of the Elder Things from H.P. Lovecraft's novella *At the Mountains of Madness*. There is no known connection between Lovecraft and the Toho production team, but this is a moment of aesthetic intertextuality.

King Ghidorah's taxonomically jamming [jamming or jarring?] design works in the film's favor. While most dragons, and certainly the film's dino-monsters, are related to chthonic or aquatic forces, King Ghidorah is not. He is extinction riding on the tail of a meteor, descending from the Heavens.[24] The meteor impact itself is not the potential source of extinction [The meteor-strike theory of dinosaurian extinction had of course not been formulated yet. It was, like the Maisaura discovery, in the paleontological future.] . Additionally, because of the dino-monsters' presence, the dragons are not an inherent source of extinction, either. Consequently, we must turn to the tried-and-truth symbolic relationship for these films: nuclear weaponry. As noted by Ryfle and Godziszewski, Godzilla's critical power had diminished by the 1960s, with Japan's economic growth inspiring optimism in the population (206). Instead of abandoning Godzilla, Toho adapted their flagship property into something different: "Godzilla was tamed and transformed into a guardian of postwar Japan's prosperity" (Ryfle and Godziszewski 206). Godzilla's symbolic nature is a logical progression given both the metaphorical nature of the bomb and the Japanese relationships with nuclear technology in the 1960s. As mentioned by Hendershot, nuclear technology is an evolutionary symbol. As a bomb, it was both prehistoric monster and agent of devolution. However, as a source of energy, nuclear power could lead to utopia and evolutionary progress for civilization (Hendershot 320), which is particularly salient for Japan, as it has not indigenous coal or oil. Godzilla shifted from bomb to energy, thus paving a new road for the dinosaur-as-nuclear-technology allegory. This shift may not be coincidental. In 1961, construction of Tokai Nuclear Power Plant, Japan's first nuclear reactor, began. Much as Japan tamed Godzilla and turned him into a protector, Japan tamed nuclear energy, allowing for the nation's increased prosperity.

[24]Much like Lourie does with *Gorgo*, Sekizawa, the writer of *Ghidorah, the Three Headed Monster*, seems to predict major paleontological discoveries before the paleontologists do. Here, Ghidorah's arrival by meteor, and the threat of extinction, parallels the current hypothesis that a meteor triggered the extinction of the dinosaurs.

Just as the nuclear imagery and themes change, so do the evolutionary imagery and themes. While previous *kaiju* films were concerned with breaking down the creationist wall built by *kokutai* and defining Japan as a land of prehistory and the struggle for survival, *Ghidorah* concerns itself with unity between organisms on Earth. The film continues the previous films' assertions of prehistoric themes, with Godzilla and Rodan fighting once they meet. The struggle for survival is still real in these films. In fact, the filmmakers are a bit heavy-handed with equating Japan with natural selection and the struggle for survival: in scenes where Godzilla and Rodan fight, and when the Earth *kaiju* combat King Ghidorah, Mt. Fuji, a symbol of Japan, hovers in the background. The film does not deny natural selection in this regard. Instead, it introduces unity among the species, which reflects the evolutionary theory and philosophy of one of the most "influential and controversial scientists in Japan" (Godart 204).

Kinji Imanishi was a Japanese biologist interested in finding a theory of evolution that would "challenge Darwin and natural selection theory, and find a new theory of evolution not based on competition" (Godart 204). As mentioned in Chapter 3, Japanese scientists and philosophers were often concerned about the implications of natural selection in relation to Japanese culture. While the nationalist Meiji, Taisho, and early Showa governments attempted to assuage such anxieties with the creationist *kokutai* education, biologists and philosophers attempted to find theories that would solve the problem by using scientific experiments and information pulled from biology. Based on his research with mayflies, Imanishi believed that "*all* biological life was 'social'" (Godart 216). His theory of evolution was based upon "species society," which argued that "organisms, species, and eventually all living beings formed one society – one unified system – which he called 'total society of living things'" (Godart 216). This theory of evolution clashed with Darwin's theory, and Imanishi himself summed up the

differences succinctly: “Darwin’s theory of evolution is based on the principle of strife, whereas mine is based on the principle of coexistence” (qtd. in Godart 220).[25] Godart mentions, however, that Imanishi did not deny natural selection and competition in his theory, but instead, thought that “competition and natural selection alone could not explain evolution” (220).

Imanishi’s theories began development in the 1930s, and continueed to evolve and disseminate until his death in 1992. He first outlined his theory in *The World of Living Things*, which was published in 1937; soon, the book became canonical in Japan (Godart 215) Ishiro Honda was scientifically literate, so it is not a stretch that he was aware of different evolutionary ideas, and Imanshi could have influenced his work. However, it matters not if the evolutionary themes are intentional or seeped in through the cultural zeitgeist. What matters is that *Ghidorah* works with evolutionary themes, and does so in ways that are different from the movies before it. Imanishi’s formulation of evolution involving conflict and coexistence are reflected in *Ghidorah, the Three-Headed Monster*, as there is not only cooperation between different species of monsters, but also between species in general. Both the human characters and *kaiju* must work together to defeat King Ghidorah. While there are no grand displays of martial effort in the movie, the humans do facilitate discussion between the monsters. In a comedic scene, Mothra attempts to negotiate with Godzilla and Rodan, trying to persuade them to help her fight against King Ghidorah. The *Shobijin*, mystical beings are they are, translate the conversation for the human characters. Despite Mothra’s pleas, the two dino-monsters are apathetic towards humans and Ghidorah’s presence. Godzilla even states that humans “are always bullying [me].” Mothra rebuts, “Earth is not just for mankind, but for everyone. It is [the monsters’] job to protect it.”

[25] Imanishi’s theory of evolution did deny certain principles of evolution that are understood today to be true. Particularly, Imanishi denied individual variation and random variation (Godart 220). Instead, populations evolved simultaneously. He also thought the environment was not a decisive factor in evolution and speciation (Godart 220). However, his ideas about cooperation and conflict in evolution do predict David Sloan Wilson and Elliott Sober’s theory of multi-level selection in a few ways.

Mothra's dialogue shows a generic shift in *kaiju* movies, as it decenters humans, denying them a placement at the top of the evolutionary chain. Mothra's plea also suggests a species society, cooperation between species, which allows for the survival of life on Earth against King Ghidorah, the embodiment of extinction. *Ghidorah* reflects Imanishi's proposition that survival is based on cooperation between species.

Shindo, the human protagonist, becomes frustrated with the monsters' refusal to help. He utters the line, "Men are not the only stubborn creatures." With this line, Shindo suggests that there is a commonality between humans and monsters and that the motivations for the monsters can offer a form of identification. Shindo's dialogue dissolves the barriers between human and dino-monster, which is evident in the movie's final scene. The human characters watch Ghidorah fly off, and as do the monsters. However, we are not shown the monsters leaving Japan. Instead, the nation has become a land in which prehistoric monsters and humans can coexist. Later films in the first sequence of Godzilla films continue monster/human coexistence, as Godzilla is never again a threat to Japan unless he is under some form of alien mind control. *Ghidorah* plants the Tree of Life in the *kaiju* genre, and it flourishes in subsequent Godzilla films.

The cooperative relationship plays out not in just the *kaiju* centric part of the plot, but also in the human elements of the plot. *Ghidorah* characterizes the monsters in ways that assign positive character traits to the monsters, such as cooperation and teamwork, and this allows them to survive their battle with King Ghidorah. This happens on the human level as well by comparing the protagonist group, comprised of Shindo, Salno, and his colleagues with Malness and the Selginan assassins. Malness and his superiors in the Selginan government want to kill Princess Salno in an attempt to rule the country. Despite being a group of assassins, they do not coordinate as a group and those they work against confound them repeatedly. The assassins

display the aggressive, individualistic psychology of a group of people locked in the struggle of survival but are forced to cooperate. Shindo's group, by comparison, works together to protect Salno and negotiate with the monsters, thus exemplifying Imanishi's social conceptualization of evolution. It is the individualistic and brutal nature of Malness, who carries out his orders so that his superiors will not consider him weak and dispose of him, that leads to his death. His single-minded compulsion to kill Princess Salno places him in the same vicinity as the *kaiju* fight. Malness' ignorance of the environment around him results in his death in a landslide.

Ghidorah, the Three-Headed Monster continues to use the same tropes other *kaiju* films have used before it. However, unlike previous films, it pushes those tropes in other directions. By retelling the Orochi myth, *Ghidorah* encodes Japanese mythology with evolutionary themes. The storm god Susanoo no longer takes on the form of a human, nor is he a god of storms. Instead, he takes on the form of dinosaur and is the dragon of nuclear energy. Orochi becomes King Ghidorah, a dragon that is similar in form and meaning but takes on the evolutionary theme of extinction. Yet, the narrative does not become a story of human against dino-monster, but instead, a story of dino-monster against dragon. However, that dragon, King Ghidorah, is not a supernatural dragon, but a naturalized beast from another evolutionary history alien to Earth. Instead of positioning humans as hapless victims stuck between two rampaging giants, they are protected by one of the giants. In doing so, with the help of Imanishi's evolutionary theory, a connection between the dino-hero and the human flourishes, and the Tree of Life grows out of not the exclusive survival of humans, but of all life on Earth.

Conclusion

Gorgo and *Ghidorah*, *the Three-Headed Monster*, through very different ways, turn the dino-monster into the Dragon of Eden. With this action, the separation between the dino-monster

and humanity collapses, signaling a variety of changes in the narrative, and with that, meaning. Unlike *The Beast*, *Gojira*, or *Godzilla Raids Again*, the humans are impotent in restoring the superiority they thought they had over nature. Prehistory enters the frame and can never be forced out. Instead, it chooses to leave or remains. An acceptance of evolution and the connection between all life exists throughout these films. While *Gorgo* does this by humiliating humans, in crushing their militaries, *Ghidorah* takes a less aggressive route by giving the Dragon of Eden a voice and engaging in negotiations with the humans. The Ladder of Being is dismantled and progressive evolution defenestrated, as the humans in both Gorgo and Ghidorah must recognize that they share the Earth with monsters with whom they share an evolutionary connection, and who could easily replace humanity. However, this fear of extinction or devolution is given little thought, as Gorgo, Ogra, Godzilla, and Rodan have little interest in actual destroying humans, but seek to coexist with humans.

CONCLUSION. DINO-MONSTER FILMS AND ENVIRONMENTAL IDEOLOGY

When we feared the dragons, were we not fearing a part of ourselves?

- Carl Sagan, *The Dragons of Eden*

Literary scholar Peter Swirski argues "[f]ictions convey knowledge about people and their relation to the world not explicitly, but to a great extent, implicitly" (28). Dragon tales and dinosaur movies express a multitude of different meanings in regards to our relationship with the world. On one level, narratives about fire-breathing serpents, radioactive dinosaurs, and genetically engineered monsters are constructions that we engage in for entertainment, possibly on a cathartic level. Predators stalking us in the night, destroying our cities, might be echoes of a distant past when humans were prey for other animals. According to psychologist Deirdre Barrett, the monster narrative provides excitement, but it is safe, as the defeat of the monsters is "a ritual return to normality at the end" (143). Slaying these beasts provides relief, the feeling that we can defeat any threat that comes our way.

Literary scholars and anthropologists have entertained the cognitive origins of monster narratives (Gilmore 187-189; "Monsters of the Fantastic" 273). However, monster narratives not only function on a cognitive level but on an ideological level as well. Myth, according to Joyce Tally Lionarons, is monologic, "[speaking] in a single, seemingly uncontested voice from a single, authoritative point of view" (5). The monologic nature of a mythic narrative, the dragon-slaying myth in particular, establishes order in the status quo by enacting violence against an other (Lionarons 8). In dragon narratives, the dragon is the other. Dragon slaying legitimizes

humanity; the supernatural entity that destroys the dragon, for the benefit of humanity, deems the violence as sacred (Lionarons 9). The dragon-slaying myth legitimates a myriad of actions and ideas depending on the individual culture, but the first and foremost idea the narrative promotes is humanity's separation from and dominion over nature. Joseph Campbell, in devising his monomyth, references the same ideological underpinning of monster slaying narratives:

> The world period of the hero in human form begins only when villages and cities have expanded over the land. Many monsters remaining from primeval times still lurk in the outlying regions, and through malice or desperation these set themselves against the human community. They must be cleared away. (337).

Jonathan Evans also recognizes the dichotomy between the social place of the humans and wilderness of monstrosity (96). Just as the early human band killed the predator for its survival, humanity must destroy the dragon, a predator rendered the symbol of nature, to justify their encroachment into nature. The inverse, nature encroaching onto cultural and social spaces, is never allowed.

By the mid-20th century, dragon-slaying narratives become important again. On a political level, the Second World War, the Cold War, and nuclear proliferation provided plenty of metaphorical dragons and monsters to be slain. Regardless of the additional concepts the dragon could and did symbolize, nature was still in the symbolic forefront. As the stories of Godzilla, the Rhedosaurus, Gorgo, and other dino-monsters show, humans are still concerned about the encroachment of nature into social and cultural spaces. By the 20th century, however, humans had other reasons to worry about nature's encroachment. The ancient origins for the myth, human survival and justification for societal development, were replaced by ideological

challenges brought about by Darwin's theory of evolution and fact that humans and animals are not totally separated but closely related.

Science historian Anita Guerrini asserts that the "evolutionary history of humans… complicates the human-animal divide" because it alters our conceptualization of what is human and presupposes a history before *Homo sapiens* (31-34). A pre-human history endows animals with a sense of agency, that their actions are important, and that humans are not the only contractors in the great history construction project. The blurring of human and animal categories strikes at deep-rooted ideologies held by many cultures, including American and Japanese cultures. "Throughout human history," states Jeffrey Moussaieff Masson and Susan McCarthy, "there has been much concern with differentiating humans from beasts" (103). The evidence used to support the divide includes "our intelligence, our culture, our sense of humour, [and] our knowledge of death" (Masson and McCarthy 104). Yet, as the biological sciences show, humans are not the only animals in possession of great intelligence, humor, or even culture. Take, for example, the recent discovery that Neanderthals, an ancient and extinct relative of *Homo sapiens sapiens*, painted the earliest known cave paintings (Marris). Tool usage goes farther back, and the age of language is largely unknown. The separation between humans and animals, under the reign of Darwinian evolution, is untenable.

On top of the supposed superiority and uniqueness of humans, evolution challenges manifest destiny, religious and spiritual ideologies, and ethnonationalism. The post-war period for both the United States and Japan, the heyday of dino-monster movies, was a time of constructing and reconstruction of national and cultural identities. Proponents for and against Darwinian evolution, like before the Second World War, clashed during the post-war era. The dinosaur, a prehistoric beast and symbol of evolution, was draconified so that the spectre of

evolution could be slain effectively. While *The Beast*, *Gojira*, and *Godzilla Raids Again* may make concessions to evolutionary theory, such as accepting that the United States or Japan may have a prehistory, the films still separate humans from the animal monsters they destroy, as technology and culture are effective weapons against the dragon.

The films analyzed in this thesis are decades old, and logically, may speak to anxieties possibly locked in those specific periods. However, despite the difference in time and space between the five films analyzed and America today, *kaiju* and dino-monster films still address concerns over the implications of Darwinian evolutionary theory while utilizing various aspects of dragon imagery and iconography. A handful of recent films are *Godzilla* (Gareth Edwards, 2014), *Jurassic World* (Colin Trevorrow, 2015), *Shin Godzilla* (Hideaki Anno, 2016), *Kong: Skull Island* (Jordan Vogt-Roberts, 2017), and *Rampage* (Brad Peyton, 2018). Each of these films, despite coming from different sources, different creative teams, and different cultures, all integrate an important iconographical dragon image as a part of their climaxes. Recall Michael Delahoyde and his central argument in "Medieval Dragons and Dinosaur Films": dinosaur movies recycle the image of the hero stabbing the dinosaur in the mouth, a common visual motif in dragon iconography and myth. Each film mentioned above involves the protagonist of the movie slaying the dino-monster by injuring it in mouth or adjacent area. Additionally, just as previous dino-monster movies have done, the contemporary films speak to specific anxieties over evolutionary theory and a human/animal connection, often incorporating evolutionary imagery and rhetoric.

Rampage, the most recent film, is an adaptation of the popular arcade video game from the 1980s and stars Dwayne "The Rock" Johnson as primatologist Davis Okoye who works with George, an albino gorilla saved from poachers in Africa. Unfortunately, for Davis and George,

an unknown chemical compound mutates the gorilla into a violent, rampaging monster. Unbeknownst to the characters in the film, these mutations are caused by a comically evil corporation, and George is not the only animal inflicted with mutations – a wolf dubbed Ralph and an alligator named Lizzie are mutating into gigantic beasts. The film sets up George to be the "human surrogate" monster for viewers, as he receives the most characterization compared to the other monsters. George can also communicate with humans, as Okoye has taught the gorilla sign language.[26] The film ends with a climactic battle between George, Ralph, and Lizzie in Chicago. After the trio of mutants tears down Willis Tower, evoking 9/11 imagery, Lizzie promptly kills Ralph with a death roll, which leaves George to fight Lizzie alone. George kills the mutant alligator when the latter jumps onto the alligator's head and impales it with a girder beam, replicating the mouth-pierce image. The film's central theme, however, deals with a separation between culture and nature: the main conflict centers on the human characters bringing George back into the cultural realm after his mutation. Ultimately, he is the only one that can kill Lizzie, and as the human surrogate, he does so. NBC News reviewer Noah Berlatsky points out how the film is a human against nature narrative, "[a]nd it's at its goofiest and most mediocre when it suggests that the ongoing battle between humans and nature is going to result in a happy ending for gorillas, humans, or anyone else." What is interesting about this analysis of the film's theme is it ignores that it privileges certain animals – namely humans and other primates – above other animals, such as Ralph the wolf and Lizzie the alligator. Because they are Dragons of the Apocalypse, either human heroes or a heroic Dragon of Eden (in this case, a gorilla who participates in culture) must destroy them.

[26] George's sign language vocabulary includes a variety of words that question Okoye's ethics as a primatologist. Phrases in his lexicon include "you look like shit," "let's kick some ass," and "fuck you."

Kong: Skull Island takes a similar path when devising the binary between human and animal, with Kong acting as the human surrogate monster. While *Rampage* invoked 9/11 imagery with the falling of Willis Tower, its inspection of such cultural trauma and anxiety is very limited. *Kong: Skull Island* decides to tackle specific cultural moments, anxieties, and trauma head-on with its 1970s setting and explicit references and allusions to the Vietnam War. The film's human antagonist Preston Packard (Samuel L. Jackson) is a U.S. Army officer that seeks revenge on Kong after the giant ape kills his men in retaliation for the humans bombing Skull Island. In the film, the island's monstrous inhabitants pick off American soldiers assigned to protect a scientific investigation. *Kong: Skull Island* offers an interesting critique of the Vietnam War and American neo-colonial practices, as American military and scientific forces attempt to invade the island despite the presence of peaceful natives. The island strikes back, in both the form of Kong and the antagonist monsters called Skullcrawlers, gigantic prehistoric reptiles that slither around on two legs, calling up images of both dinosaurian predators and serpents. Despite the island striking back at humans for the destruction of the environment via the local flora and fauna, the humans manage to escape from the island and avoid death by skullcrawlers. Once again, the giant gorilla saves the day in a similar fashion to George's heroic dragonslaying. While Kong does not use language, he does recognize the human protagonists as good, and he does use technology (a massive tree) to combat the alpha skullcrawler. The climactic strike that kills the alpha is Kong reaching into the dino-monster's stomach and ripping out its entrails; another Dragon of the Apocalypse killed by a strike to the mouth by a primate Dragon of Eden.

Rampage and *Kong: Skull Island* only implicitly engage with dragon imagery and evolutionary themes, with culturally pertinent social anxieties taking the forefront. Conversely,

Shin Godzilla manages to place evolution, the dragon, and socio-cultural anxieties into the forefront. The film consciously mirrors the 2011 Tōhoku earthquake and tsunami, with Godzilla's early forays onto land, via urban waterways, bringing boats and water with him. The film also evokes the Fukushima Daiichi reactor meltdown that resulted from the aforementioned earthquake. Godzilla is radioactive and the film reiterates this whenever it gets the chance. Godzilla's origins are also discussed extensively: American nuclear waste dumping mutated a prehistoric, deep-sea organism. Throughout the film, Godzilla constantly evolves to cope with new environmental pressures, such as growing legs so that it can walk on land. One of the protagonists refers to him as "the perfect organism," and states that the nuclear leviathan could easily destroy all life on Earth. Eventually, the characters concoct a chemical that can extinguish Godzilla's internal nuclear reactor, and they name this plan Operation Yashiori, after the sake used to put Yamata-no-Orochi to sleep. The way the military forces manage to force-feed Godzilla the chemical compound is by incapacitating him and shooting the chemical in his mouth with the use of fire hoses. *Shin Godzilla* consciously enters into the dragon realm by directly referencing Orochi and delivering Godzilla's death orally. The film also taps into anxieties over evolution in other ways by establishing Godzilla as a consistently evolving entity. As Godzilla evolves to deal with environmental pressures, he takes on new forms. *Shin Godzilla* ends with a shot of Godzilla's tail, which is breaking apart into grotesque, smaller humanoids. The humanoid Godzillas have a dark implication rarely seen in *kaiju* or dino-monster film, even ones that bridge the evolutionary gap between humans and monster: the worst form monstrosity can take is the human form. Regardless, human collaborative effort and technological prowess can suppress the connection between humanity and animality.

Not all recent dino-monster movies are anxious over evolution. A few celebrate the human and animal connection. For example, both *Jurassic World* and *Godzilla* rely on teamwork between the human protagonists and dino-heroes. *Jurassic World*, the fourth entry in the *Jurassic Park* film franchise, stars Chris Pratt as *Velociraptor* trainer Owen Grady and Bryce Dallas Howard as park operations manager Claire Dearing as the two confront the Indominus Rex, an artificial and genetically modified dinosaur. To defeat the Indominus, which proves too intelligent to let humans kill her, Owen and Claire decide to release the park's *Tyrannosaurus rex*, the same one from the first *Jurassic Park*. Unfortunately, the Indominus proves to be too strong for the *T. rex,* and all hope is lost until Blue, a *Velociraptor* that Owen formed a close bond with, starts to aid the *T. rex*. As the two dinosaurs push the Indominus back, a *Mosasaurus*, a gigantic aquatic reptile, leaps out of a nearby enclosure and drowns the genetically modified dino-monster, who is also a monstrous albino, like George and Moby-Dick. In reversing the heroic roles, the dino-monster Indominus Rex finds its defeat not by being stabbed in the mouth, but by being caught in a larger mouth (which echoes the struggle for survival). The human characters manage to survive because of the dino-heroes, a *Velociraptor* and *T. rex*, two species of dinosaurs that were the antagonists of the first *Jurassic Park*.

Finally, Gareth Edward's 2014 film *Godzilla* plays with dino-monsters and dragon imagery in ways that have similar implications. The film is one of the few monster movies to come out in recent years where the dino-monster is clearly a hero – at least, in Godzilla's case, an anti-hero. Both Godzilla and his enemies, the MUTOs (Massive Unidentified Terrestrial Organisms), are immensely prehistoric, dating back to the Permian period, over 250 million years ago. Despite his pre-Mesozoic, pre-dinosaur origins, Godzilla clearly takes inspiration from the Lordly T. Rex archetype. Scientist Ishiro Serizawa (Ken Watanabe) states that Godzilla

is an ancient alpha predator that seeks to restore balance to the world, thus reinforcing the ancient reptile's role as lord of the ecosystem. Interestingly, the world is unbalanced because of human actions, the awakening of the MUTOs, but he does not attack humans. Instead, Godzilla hunts down the other monsters and destroys them, and after this goal is complete, he returns to the sea. Despite Serizawa's words of wisdom, all other human characters are interested in killing Godzilla and the MUTOs, with a nuke being their primary weapon. Despite this, the film constantly calls into question whether human technology can stop the MUTOS or Godzilla, with each attempt failing. Ultimately, Godzilla kills the MUTOs, with the nuclear leviathan killing the final one by shooting his atomic heat beam down the its throat, once again, reenacting the iconographic image. The film ultimately call into question humanity's ability to slay monsters effectively, as Godzilla, a monster that straddles the line between Dragon of Apocalypse and the Dragon of Eden, is the only one that can defeat the MUTOs. Godzilla destroys the MUTOs not with the aid of culture, technology, or humanity, but with his prehistoric, brute strength. It is a struggle for survival, but Godzilla is not interested in competition with humans, but instead, seems to want to balance the world (or protect his territory, the entire world).

Jurassic World and *Godzilla* defenestrate the traditional dino-monster/dragon narrative by placing humanity's survival not in its own hands, but instead, in nature's hands. Today, the dino-hero is a generic trope for giant monster narratives. Ever since *Ghidorah, the Three-Headed Monster*, Godzilla has been a hero or anti-hero more than he has been a villain. However, the dino-hero trope is more prevalent in Japanese monster narratives, as American dinosaur films are wont to cast the dinosaur as a monstrous other. The monstrous other may no longer be the standard in the United States if *Jurassic World* hints at the promotion of the dinosaur into the hero. Outside of the strictly dino-monster genre, many monster films affirm the human-animal

relationship, such as Kong, George, or Mothra. While *The Beast from 20,000 Fathoms*, *Gojira*, and *Godzilla Raids Again* recycle traditional dragon iconography, the precedent set by *Gorgo* and *Ghidorah, the Three-Headed Monster* involves accepting evolution and the human-animal relationship. The turn towards draconic and dinosaur heroes, however, seems to be a logical progression for their class. Mitchell argues that the postmodern dinosaur may be scaly and frightening, but at the end of the day, it is the *T. rex* that saves the humans in *Jurassic Park* (101). The dino-hero model has become mainstream since the 1990s, and with the march of globalization, the 21st century may be the century of the draco/dino-hero, as *Godzilla*, *Jurassic World*, and *How to Train Your Dragon* are popular exemplars of the archetype.

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