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Planet Superman: An ecocritical analysis of the Man of Steel from 1938-2017

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**PLANET SUPERMAN: AN ECOCRITICAL ANALYSIS OF THE MAN OF STEEL
FROM 1938-2017**

A thesis submitted to
the Graduate College of
Marshall University
In partial fulfillment of
the requirements for the degree of
Master of Arts

In
English
by

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Approved by

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May 2017

APPROVAL OF THESIS

We, the faculty supervising the work of Justin Hart Crary, affirm that the thesis, *Planet Superman: An Ecocritical Analysis of the Man of Steel from 1938-2017*, meets the high academic standards for original scholarship and creative work established by the English Department and Marshall University. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With our signatures, we approve the manuscript for publication.



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I would like to dedicate this thesis to both of my parents, Bruce and Becky Crary (my Jonathan and Martha Kent), who introduced me to my first Superman comic at a young age and fostered my love for reading and watching science fiction. I also want to thank all of my peers and professors who aided in the creation, research, and moral support for this idea—especially Dr. Cody Lumpkin, Dr. Kristen Lillvis, Professor Mitchell Lilly. Also, a special thanks to JP Midkiff, who acted as the Bruce Wayne to my Clark Kent. I learned to read on Superman comics, so it seems only fitting that I finish my M.A. on him as well.

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ABSTRACT

Planet Superman is a critical examination of the DC comic book superhero Superman as analyzed through an ecocritical lens. The primary argument is that, within the world of DC Comics, Superman is single-handedly capable of ending all of the Earth's various ecological crises using his very existence as a solar battery or using his superhuman power to become a totalitarian despot that enforces the law through superior firepower. I calculate Superman's greatest feat of energy output to prove how much solar energy is actively dormant within the Man of Steel. Using the several "versions" of Superman throughout his 79 year career (Golden Age, Silver/Bronze Age, and Modern/New Age), I argue how DC Comics has changed the character to meet the needs and values of the era he was being written in, but purposefully do not have him solve all of the world's environmental problems for mankind. Using eco-critical theorists such as Cheryll Glotfelty, Ursula K. Le Guin, Glen Love, and Frederick Turner, this thesis poses and answers the questions of whether or not Superman saving humanity time and time again has actually made him antagonistic to the environment as a whole or if he is simply delaying the inevitable annihilation of man through their own wasteful and ecologically destructive methods—similar to how his own planet Krypton was destroyed. The question answered is whether or not human beings are a species that can save themselves or if they must be helpless bystanders as they wait on a "Superman" to do it for them.

INTRODUCTION

Superman. The Man of Steel. The Man of Tomorrow. The Last Son of Krypton. They are names and titles known all across the globe as the first and arguably most well-known superhero ever created. Published in 1938 by Jerry Siegel and Joe Shuster, Superman is a character who has survived and often thrived in world culture for over 75 years. He has lived through the aftermath of World War I, the entirety of World War II, the Cold War, Vietnam, as well as the political scandals and corruption that ran rampant throughout the 1970's and 1980's, coming out on top in each and every circumstance—both in fictional terms and real-world sales. He has been and is still an iconic staple in American comic book culture that has stood the test of time, as authors continually reinvent him and have him combat many of the crises we as humans face and have faced over the last century.

My introduction to the Man of Steel came when I was around five years old. My father purchased my very first comic book for me—1992's *Adventures of Superman* no. 501. Ironically though, the issue did not have Superman in it at all. My dad was just one issue too late in getting me the beginning of the famous storyline—the Death and Return of Superman. The issue he did buy me was the introduction of Superboy, a clone made from Superman and his archenemy Lex Luthor's spliced DNA. Superboy was created to replace the Man of Steel. This was not my dad's Superman. Still, even as a kid who just loved the pictures, I eagerly begged for more until, as a father who wanted his son to love the character as much as he did, he provided. The stories that followed are not some of the more popular in DC's history, certainly not stories that made readers fall in love with the character.

This Superman had just returned from the dead, sported an 80's mullet, donned an all-black version of his traditional costume, and struggled with accepting what had happened to him

in his demise. It did not matter to me though. I loved him. I loved everything the character represented. I learned to read on his comics and begged my dad for more and more until he had to start backtracking and eventually introduced me to the Superman that came before my era, the Superman of his time popularized by Christopher Reeve in the 1970's and 1980's. It was in this exploration that I learned about the *Crisis on Infinite Earths* and how there had been multiple Supermans published over the years. Not multiple incarnations of the character, but literal distinct and separate Supermans who could interact with each other and aid each other on missions to save the world within the DC franchise of comic books. I was in elementary school and already learning multiverse theory, the notion that multiple parallel universes exist alongside the actual universe we all inhabit. These parallel Earths would theoretically contain various versions of ourselves that make different life choices. Like many franchises, DC took this concept and created their own infinite multiverse.

The prefix “super” is Latin for “above” or “beyond.” Combining that with the suffix “man” creates a definition that literally means “above/beyond man,” a title very fitting for a character who can supposedly accomplish anything. Over the course of his comic book career, Superman has been analyzed through various critical viewpoints, but primarily as an icon of both patriotism and moralism. However, examining his environmental practices through an ecocritical lens is a relatively unexplored avenue of analyzing the character. The one national and global issue that writers have never made him solve permanently is the global energy crisis—despite being the ideal crisis for him to end with him being the perfect solar battery. He has single-handedly stopped Adolf Hitler and Joseph Stalin (Siegel and Shuster, “How Superman Would End the War” 16-17), but never stopped mankind from burning all their fossil fuels. He has dismantled and destroyed all of the world’s nuclear devices (Furie), but never provided clean and

sustainable energy to the planet as a whole, even though he could do so without expending much effort at all. Superman is a living solar battery who is metaphysically able to hyper-metabolize solar radiation, absorbing into himself a specified quantity and then, while somehow breaking the scientific laws of conservation, creating more of the energy inside his body. If somehow periodically plugged into a powerful enough thermonuclear reactor, Superman would provide an infinite amount of sustainable energy to the entire planet for the rest of eternity, in turn, solving the environmental crises of climate change, pollution, and the destruction of ecosystems worldwide. And I hypothesize that he could do all of this within approximately a single second.

However, he does not single-handedly or permanently solve the planet's ecological woes. He never has. He basically refuses to do so. Instead, writers use him as a "Band-Aid" to quickly fix the environmental "injuries" we humans cause, never having him heal them completely. Superman fixes the problem at hand, but never the problem at its core. He saves human lives, but often pits himself against natural disasters and even nature as a whole, therefore perpetuating the same cycles of environmentally destructive practices that have been an issue since the onset of the Industrial Revolution. So, the question must be asked whether or not Superman being a proponent and "savior" for mankind puts him in a direct and antagonistic conflict with the natural world? Is his aversion to the loss of human life making the character nature's enemy and simply repeating the same mistakes his forefathers made in the destruction of their home world of Krypton, a planet that, in most incarnations of the story, exploded due to the inhabitants' constant exploitation and excavation of natural resources.

Of course, there is an underlying irony in the fact that, to raise eco-awareness, printed literature of any kind requires resource consumption to be produced, distributed, and read, but comic books, like many forms of literature, have begun printing their materials digitally in recent

years. The purpose of this project will be to analyze Superman in the entirety of his comic book history from 1938 to 2017, examining how each of his multiversal incarnations—the Golden Age Superman of the 40’s and 50’s, the Silver/Bronze Age Superman of the 60’s, 70’s, and 80’s, and the Modern Age Superman of the 90’s and new millennium—have treated and combatted the issues of environmental destruction and energy consumption, the ultimate reason for why he has not single-handedly abated both crises permanently despite the fact that he is one of the most powerful solar batteries in fictional history.

Ages of Superman

To understand how the character of Superman has changed over time, one must first understand how DC Comics has constructed a fictional multiverse over the last seventy-nine years of publication. For the purposes of the comic book genre, a multiverse is defined as the existence of an infinite number of possible universes where multiple Earths can exist simultaneously that each have multiple and different histories, and in this case, different Supermans. Originally conceived by Erwin Schrodinger in a lecture in Dublin in 1952 (Deutsch 310), the multiverse concept was utilized by DC Comics and other comic book companies to give authors and filmmakers creative freedom to write Superman (as well as other comic book characters) how they wanted in several spin-off series that altered Superman’s history, personality, powers, etc. However, DC Comics has always kept a “primary” Superman as the source material that the company got to decide what happened with, thus limiting what could be considered canon in the mainstream comic book universe. But even with a canonical character, seventy-five plus years of writing, multiple and ever-changing authors, differing time periods,

and varying social issues have all caused inconsistencies among the characters, forcing the company to effectively reboot their comic book universe several times.

Similar to how the Greek and Roman poets Hesiod and Ovid detailed the four (or five) Ages of Man, so too did the comic book industry eventually lay out their own “Ages of Comic Books” during their first massive reboot in 1986 with *Crisis on Infinite Earths* which explained that there had been two Supermans up until that point: the Golden Age Superman from Earth-Two that existed from 1938-1955 and the Silver Age Superman from Earth-One that existed from 1956-1986. The 12-issue series *Crisis on Infinite Earths* effectively compartmentalized the DC Multiverse into a singular universe that created a brand new history for Superman, one that incorporated elements from all past incarnations of the character (Wolfman). This new Superman was labeled the Post-Crisis Superman of New Earth and lasted from 1987 all the way into 2011 when the whole of the DC universe was rebooted yet again by the relaunch of what would come to be known as The New 52 (Johns, “The New 52!”). And while other comic book companies such as Marvel Comics have their own multiverses and periodically reboot their continuities as well, like in Jonathan Hickman’s *Secret Wars* series, they do so more in a “soft reboot” fashion, meaning they keep some of the older comic books’ canon and only retcon aspects of the newer comics that contradict their idea of canon. Twice now with Marv Wolfman’s *Crisis on Infinite Earths* and Geoff Johns’ *Flashpoint*, DC Comics has proven to be the only company that generally reboots their entire multiverse on such a grandiose scale that actual newer versions of their characters are created while their older outdated versions (still in existence) are pocketed in time as their own separate universe.

Just as people’s attitudes and beliefs change over time, so too do the values of the four primary incarnations of Superman: Golden Age (1938-1955), Silver/Bronze Age (1956-1986),

Post-Crisis or Modern Age (1987-2011), and New 52/Rebirth (2011-Present 2017). The real world time periods they existed in heavily influenced the kinds of national and global issues they faced on a monthly basis. Coming from a war-torn era as well as the Great Depression, Golden Age Superman focuses primarily on American nationalism and capitalistic ventures (Siegel and Shuster, “The Black Gold Oil Well”). During the time of the Cold War and Civil Rights Movement, Silver Age Superman is concerned with social justice and worldwide nuclear threats (Furie). Both the Modern and New Ages of Superman have him tackle everything from environmental issues to international terrorism (Z. Snyder). However, they never have him permanently solve any of them. As such a powerful and multifaceted character, there is not a crisis Superman is unequipped to handle. In fact, that is the very point of Superman—that he is a character equipped to handle any situation, any conflict, and any crisis that may arise. However, for all his power and morality, Superman never seems to put a definitive end to the major problems mankind seems to face or bring upon themselves. He could. He does not. People say he should. He will not. To understand why, the reader must first understand Superman’s origins as well as the planet he came from.

Krypton’s Environmental Background

Superman’s backstory has seen a lot of revision over the last seventy-nine years of publication, but one aspect has always remained consistent. He is an alien from the doomed world of Krypton who rocketed to Earth as an infant to avoid his planet’s imminent annihilation. One must analyze why Krypton was destroyed in the first place to understand why Superman refuses to solve all of the Earth’s ecological and energy woes. Like with the character himself, the history and destruction of the planet Krypton has seen just as much revision over the years.

However, in most modern incarnations of its history, Krypton was obliterated through the mining and harvesting of the planet's core to be used as energy for the people of the planet (Z. Snyder). Sound familiar? This practice eventually leads to the explosion—actually implosion—of the planet's core, wiping out all Kryptonians who were not away from the planet at the time. Fortunately for the young Kal-El, he is sent safely off world with his mother's final words going out to him as: "Make a better world than ours, Kal..." (Z. Snyder).

Lara's statement is the standard that every Superman fan (and hater) holds him to in the comics and films. That is what he is on Earth to do—to make a better world than the one his people destroyed. However, does he or can he live up to that expectation? He saves people. That cannot be argued. Purchase and read any comic book issue that has Superman in it, and you will inevitably see him saving someone from something somewhere. However, the question is not whether or not he is saving *people*, but whether or not he is really saving the *planet*? Or is he even making a better world than his home planet at all? After all, Krypton explodes due to the neglect to heed the environmental safety advice given to its people by certain scientists on the Kryptonian Science Council. Jor-El, Superman's father, tried his best to save his world by convincing his fellow peers to turn away from planetary mining, but the Science Council rejects Jor-El's prediction and thinks him mad or his calculations wrong. "I tried to warn them, but they wouldn't believe me!" Jor-El says frantically in just one of the many retellings of his character's history (Morrison, "It Begins Again" 2). And so, by Superman not permanently fixing the Earth's environmental crises and allowing humans to continue mining, polluting, and consuming fossil fuels, the question is whether or not Superman is just repeating the process that led Krypton to its ultimate obliteration, in turn, leading human beings to our own ecological and planetary demise.

Earth's Environmental Background

In the last sixty years, we as a planet have more than quintupled our energy consumption, and we're projected to run out of our current fossil fuels within the next fifty to one-hundred years at the current rate in which we are consuming them (Yan 42). In the early 2000s, oil prices in America began seeing a dramatic increase due to various worldwide circumstances until 2008 when they reached an all-time high of \$150 a barrel (Yan 41). In 1950, the world's energy consumption was 100 exajoules (100 quintillion joules). In 2010, energy consumption was over 550 exajoules and still on the rise. One exajoule is the equivalent of 174 million barrels of oil (Bradshaw and Brook 702-03). This information means the human population is pumping through 95.7 billion barrels of oil a year. Imagine for a moment stacking that many barrels from the surface of the Earth into space. If you did so, you could reach all the way to Mercury and nearly half way to the Sun. Such imagery points to an absolute necessity for a solution to the energy crisis that has been plaguing the planet and rising steadily since the Industrial Revolution, as well as a need for population and consumption control.

As mentioned, comic book writers have had Superman tackle every single issue America and the world has ever faced at the time they were facing it except for the one issue the character seems best designed to solve—an issue that would make him the most relevant in today's world. Writers have had one-shot issues glossing over the severity of pollution and environmental catastrophe, having Superman offer a quick fix for the immediate threat, but never have him solve the problem as a whole, instead offering solutions in an almost PSA-style format like in *Amazing World of DC Comics Special* (Wein). Unlike all of the aforementioned crises, this one of ecological destruction is the one that still has yet to be permanently resolved, even when

Superman is perfectly equipped to solve it by harnessing the power inside his cells that literally create clean energy inside themselves.

The Ecocritical Perspective

However, within the context of the comic book world we are referring, if Superman solves all the world's problems, then what happens when Superman himself is no more? As a comic book character, Superman may never cease to exist. He is immaterial and therefore essentially immortal. So long as there are writers to write his comics and readers to read them, the character will last indefinitely. But as a fictional character living in a comic book world, Superman does grow older, does encounter death or near-death on numerous occasions, and eventually does die or disappear—seemingly for good—in several stories like *All-Star Superman* written by Grant Morrison and the aptly titled “Doomsday!” in the Death of Superman arc constructed by Dan Jurgens. Therefore, if humankind becomes so codependent on the Man of Steel to solve all of the world's problems and then the Man of Steel himself disappears, the world will plunge right back into the same position it was in before Superman began fixing everything in the first place. Superman repairing and advancing the world would be tantamount to a parent doing all of their child's homework for them. The child will receive an A in all of their classes, but be ill-prepared for the demands and responsibilities of real life. Just as one's parents cannot support them for their entire life, neither can Superman support the Earth, especially if he is going to die the same as any mortal being.

However, there is a potentially worse possibility. What if Superman does solve all of the world's problems and is essentially immortal, as displayed in the *DC One Million* story arc (Morrison, “Death Star”) set in the 853rd Century where he has lived inside the sun for over

fifteen thousand years? How would humans react to having a perpetually godlike being running everything for them, making decisions for them, and deciding what they need to do to be considered “good” in his eyes? These avenues of thought have been explored before in both the *Superman: Red Son* (Millar) and *Injustice: Gods Among Us* (Taylor) story arcs, *elseworld*-like comics that take place in an alternate reality separate from the one that DC consistently publishes. In these, Superman is more of a tyrannical ruler and despot than a savior. He runs the world under a totalitarian regime rather than the American democracy and people’s choice. By forcing the people, he saves them, the environment, and the planet as a whole simultaneously in around a year’s time, but at the cost of human freedom.

In her introduction for *The Ecocriticism Reader*, Cheryl Glotfelty defines ecocriticism as “the study of the relationship between literature and the physical environment” (xviii). She goes on to explain how ecocritical theorists seek to answer questions like: How have humans historically viewed the environment? How have ecological crises been informed through popular culture? And, most importantly for this particular examination of Superman, how has literature affected humankind’s relationship to the natural world and is science itself open to proper literary analysis as well as the implementation of that analysis? (xix). Simply put, if humankind is connected to the environment, then how can a thorough reading of Superman inform mankind’s views on the environment from the late 1930’s to 2017 as well as provide a hypothetical means of fixing the damage already caused to it by mankind itself?

I will begin by performing an *eco-periphery* analysis on the character of Superman in his early career, before environmental awareness and before ecocriticism, and examine the mindset of American writers and society in general in regards to their outlook on the natural world. In doing this, I will determine whether the environment as a whole was a primary or even

secondary concern to them before the introduction of environmental awareness, discover when exactly it became a concern if it was not considered so in the beginning, and outline what was more important to American writers of that time than the ecosystem they were a part of. From there, I will transition into the Modern Age of Superman and provide calculations for the character's true power level, analyzing why authors have not had him correct all of the world's problems overnight in the actual canon of DC's primary universe. Then, using one of the many multiversal incarnations of Superman, I will demonstrate what could happen if he did correct everything for human beings without allowing them to correct the issues on their own, creating a system of totalitarianism and eventual anarchy. Finally, I will conclude by examining how Superman can be viewed as both "savior" and "destroyer" by the human beings closest to him, Lois Lane and Lex Luthor, each representing a different response to a being from the heavens with the power of a god.

CHAPTER 1
**THE GOLDEN, SILVER, AND BRONZE AGES: AN ECO-PERIPHERY OF THE MAN
OF STEEL FROM 1938-1985**

“Faster than a speeding bullet! More powerful than a locomotive! Able to leap tall buildings in a single bound! Look! Up in the sky! It’s a bird! It’s a plane! It’s Superman! Yes, it’s Superman. Strange visitor from another planet who came to Earth with powers and abilities far beyond those of mortal men. Superman ... who fights a never ending battle for truth, justice, and the American way!”

(Robert J. Maxwell, Adventures of Superman)

To understand and examine the character of Superman and how he is informed by the environment as we see it today, we must first take him back to the beginning of his career and examine how writers viewed the environment following the events of World War II and during the Cold War era. For instance, if ecological awareness was not a concern in the 1940’s and national security trumped environmental safety practices in the 1950’s through the 1970’s, then how should we expect authors to write Superman during those time periods? The character was written to embody whatever American values the writers deemed most important for the time, no matter what those values were. He was written to be a super powered crime fighter, Moses-like epic hero, and American weapon for the Golden Age. Then he became a social justice warrior, comically overpowered superhero, and public service announcement for the Silver and Bronze Ages. Throughout all of these time periods, however, every single action Superman takes is for the betterment of Earth’s people, not for the Earth itself. He is rarely, if ever, concerned with environmental safety in these early stages of his career and even sometimes positions himself as its destroyer, placing man above nature (even evil men) just so they can continue the same cycles of destruction again and again.

In his essay “Revaluing Nature,” Glenn A. Love draws the distinction between being centered on oneself and being centered on the environment in his explanations of “ego-

consciousness” and “eco-consciousness,” respectively (230). While Love primarily uses these terms in reference to literary achievements based on self or the environment, the terms themselves can be used more broadly to describe the same concept. Ego-consciousness is the sole desire to better oneself or possibly even the ones the ego cares most about. Eco-consciousness would then be the desire to better the environment, analyzing ways to accomplish the feat through any means necessary. In the Golden, Silver, and Bronze Ages, Superman is overwhelmingly ego-conscious. He is too focused on the people of the planet to ever truly be capable of focusing on the planet itself. It is not just prioritizing the people’s welfare over the planet’s welfare, but also fostering and protecting their goals and aspirations, specifically the aspirations of the United States of America during the war-torn eras of Superman’s publication, whose primary goal was and still is to be militaristically and economically superior to every other nation in the world.

By compartmentalizing and performing a highly abridged summary of Superman’s overall history leading up to the Modern Age of comic books, this chapter will explain the complexity of DC’s highly complex multiverse, detail the Superman from each era, their powers and abilities, and most importantly prove that Superman was not created with the environment’s best interests in mind, instead created by his writers to prioritize the lives of human beings over nature. Superman is bound by the knowledge and ideologies of his creators for what he does and does not do, therefore bound by their ignorance and their attention concerning environmental factors during the time periods in which he is being written.

Multiversal Histories, Powers and Abilities

As previously touched upon in the introduction, comic book stories as a whole have generally been split up into four or five distinct eras: Golden Age, Silver/Bronze Age, Modern Age, and the current running New Age. The first use of the term “golden age” began in April 1960 and was coined by Richard A. Lupoff in his article “Re-Birth,” published in the first issue of *Comic Art*. Today, the Golden Age of Comic Books as a whole is cited to have started in 1938 with the first comic book appearance of Superman in *Action Comics* #1 and lasted until 1955 before being divided into two separate universes (Lupoff). For DC Comics and their readers, the Golden Age would come to be known as Earth-Two while the Silver Age became known as Earth-One, which was DC’s way of streamlining their stories in both an introduction and explanation of their own comic book multiverse. However, during the original seventeen-year span of publication for the Golden Age, the multiverse was not yet a concept DC needed to create, since none of their stories had become convoluted or contradictory to each other until much later, and so the Superman of the pre- and post-World War II era was the only Superman known at that time.

Initially, Golden Age Superman could only leap an eighth of a mile, lift steel beams over his head, outrun a speeding locomotive, and be bulletproof to everything but an exploding shell (Siegel and Shuster, “Superman, Champion of the Oppressed”). However, over time, creators Jerry Siegel and Joe Shuster began introducing the myriad of other abilities most readers would become familiar with as part of Superman’s normal repertoire—flight, x-ray vision, heat vision, super breath, etc.—until his power levels reached the planetary and interstellar. Interestingly enough, the Superman of the 1940’s and 1950’s did not inherit his powers from the exposure to a yellow sun. Instead, it used to be that his abilities were simply genetic and manifested

themselves under Earth's lighter gravity, as Krypton was supposedly a planet that dwarfed even Jupiter. The introduction of his solar energy absorption would not become a concept until much later in March 1960, when the Silver Age version of Superman was prevalent (Bernstein, "When Superman Lost His Powers!"), and would only be canonized to explain how Golden Age Superman also got his powers from the yellow star even later after that when both characters interacted with each other in a crossover event (Bates). This previous lack of explanation concerning Superman's abilities is reflective of the time period, when the world (or specifically America) did not need a Superman who inherited his power from a seemingly endless supply of energy like the Sun. It needed a Superman who could perform superhuman feats of strength and speed, deal with the real world problems of the time such as crime and war, and could stand for "Truth, Justice, and the American Way" (Maxwell) in a time when the American way was being threatened by other national powers. In the Golden Age, Superman needed to be a symbol of power, not the symbol of hope he would later become. Japan and Nazi Germany were not afraid of hope during World War II; they were afraid of America's military strength. The Soviet Union was not afraid of hope during the Cold War; they were afraid of America's speed in creating more atomic devices and traveling into space before them. As America's strength and speed increased, so too did Superman's. He went from being more powerful than a locomotive to breaking mountains apart with his bare hands. He went from being able to leap tall buildings in a single bound to breaking escape velocity and flying into space unaided. His powers did not need to be explained by the Sun (or explained much at all); he just needed to have them, defeat his enemies with them, and prove how superior he was to anyone who opposed him. The ideal image America wanted to portray was the image Superman had already been showing off since his conception—one of indomitable power.

An Epic Hero for the Big Screen

The character of Superman was created during a time period when both injustice and industrialization were on the rise and was crafted by two teens who lived and breathed both daily. Bullied as kids, Jerry Siegel and Joe Shuster made Superman into a hero for the oppressed. After World War II began, he became a hero for the entire nation, transforming into a beacon of strength for Americans. Both authors were Jewish in a time when Jews were one of the most persecuted groups. And while they did not impose their faith onto the character of Superman and actually make him Jewish, they did use him as a symbol, fictional weapon, and morale booster for the American soldiers and citizens who were concerned about the global war they were entering. Whether intentionally done or not, Superman became a Moses figure who fit all the archetypal characteristics of the “epic hero” that Joseph Campbell theorizes about in *The Hero with a Thousand Faces*, and persists throughout the annals of word mythology (13).

Appended and somewhat condensed later by David Leeming in his own book *Mythology: The Voyage of the Hero*, the epic hero must experience a unique or miraculous birth of some kind (7). Both Moses and Superman fit this role, as the former is saved from the Pharaoh’s murder of all male babies in Egypt (Exodus 1:22) while the latter is saved by being rocketed away from the exploding planet Krypton. Secondly, the epic hero must experience traumatic events that cause them to leave their home so they may later receive a “call to adventure” by some higher authority (Campbell 46). After murdering an Egyptian, Moses is forced to flee from Egypt and is later called by God to free the Jewish people from Egyptian slavery (Exodus 3:10). Similarly, Golden Age Clark Kent loses his parents in a car crash, which spurs him to move to Metropolis and become a reporter, where he is later called by his father’s consciousness to

become Superman and save the people of Earth. Throughout their journey, the hero often receives supernatural aid in the form of powers and weapons. For Moses, it is God's power working through him, such as parting the Red Sea or producing water from a rock. And while not a weapon, Moses' staff does symbolize God's ability to perform miraculous events (Exodus 14:26). Superman's superpowers are self-explanatory, but he also receives a gift from his birth parents in the form of indestructible cloth that he uses to fashion his costume. Finally, during their individual quests, both characters experience death and ascension to a higher plane of living. Despite the fact that he is not allowed to enter the Promised Land, Moses does receive spiritual reward by being allowed into Heaven upon his earthly demise (Exodus 15:2). Much later on in the aforementioned *Crisis on Infinite Earths* that takes place in 1985-86, Golden Age Superman of Earth-Two seemingly perishes with his entire universe, but is allowed to enter the Source Wall to live in eternal peace alongside his wife Lois Lane and allies Alexander Luthor of Earth-3 and Superboy of Earth-Prime (Wolfman, *Crisis on Infinite Earths*). For acts of service to their chosen people (Jewish and Earthling respectively), Moses and Superman may have been rewarded with an eternity of immortality and peace, but to achieve this, both had to become antagonistic to the environment, valuing human life over the life of the planet.

The most prominent relation between Superman and Moses regarding ecocriticism is the negative impact each has on the environment. Moses is most popularly associated with his connection to the Ten Plagues of Egypt, curses wrought by God that effectively wreaked havoc on the Egyptian countryside. And while it was God who orchestrated and actually caused these plagues to occur, it was still Moses who became the herald for such environmental devastation. Turning water into blood, forcing swarms of locusts and other insects to plague crops and plant life, raining fire and hail from the sky, turning day into perpetual night—all of these demonstrate

Moses' power over the natural world—power defined by going against nature and power he only sought out for the betterment of his people. In this way, Superman is no different. Every time he stops a flood, blows away a tornado, or averts some other natural disaster, perhaps even using nature to stop nature, he demonstrates the power he has over the environment and his intentions of using such power for the safety of his people. Both Moses and Superman become anti-environmentalists in their individual desire to save and protect human lives. They become servants to humankind, but simultaneously become masters over the environment. While this could be attributed to the fact that the authors of each were neither aware nor concerned with the well-being of nature, it can also be attributed to the fact that nature itself has no voice. The Jewish people suffering under Egyptian slavery are in very obvious mental and physical anguish. But when Moses frees them from captivity by manipulating nature forces, the environment has no ability to express such pain. And while the people of Superman's world cry out in fear and agony over their impending doom at the hand of such natural force, mountains and other natural objects cannot do the same when the Man of Steel breaks them apart to stop nature from destroying human lives. Both Moses and Superman play the short game of their people's safety, not realizing that making themselves destroyers of the environment could have devastating consequences for their people in the long run.

While these connections between Moses and Superman seem heavily implied by Siegel and Shuster's writing of the character, the golden age version of Superman is made more interesting due to the values he represents for America. At this stage, he does not represent the world, and he certainly does not represent the environment whatsoever. If anything, he is actually antagonistic to both. In their book *That's All Folks? Ecocritical Readings of American Animated Features*, Robin L. Murray and Joseph K. Heumann describe Superman as a character

who is consistently fighting and winning against the natural elements of the world (13). Along with the way Superman combatting nature is portrayed both on the page and the film screen, they believe his victory over the environment to be a response to World War II, as both the Superman comics and cartoons overstress what Norman Klein would call the *machina versatilis*, “updat[ing] an old theme ... the film screen as machine” (86). According to Klein, “The entire screen seems to be made of steel, like a machine housed in black, corrugated metal, with gray canyons beneath skyscrapers, and diabolical machines instead of ghouls” (86). Superman is described as the Man of Steel, and in this similarly mechanized context, the screen places Superman on a pedestal as superior to the forces of the natural world. While we obtain steel from beneath the planet, it is often used to overtake the surface in the construction of cities, factories, and other mechanized constructs. Similarly, Superman as the Man of Steel is a representation of superiority over the natural world, either when he is averting natural disasters or single-handedly fighting entire wars. As Murray and Heumann explain, “Superman always comes out victorious, expressing hope for the Allies’ own victory over the Germans” (13). The idea was that if a single superhero could stop natural disasters from occurring, then surely America could win the war. To drive this point home further, authors even had the Man of Steel make his own appearances in comic and cartoon adaptations of the actual war itself, single-handedly defeating and capturing tyrants like Adolf Hitler and Joseph Stalin, who were both equally fearful of Superman’s great power (Siegel and Shuster, “Man or Superman?”). Superman comics were not the only manufacturers to produce this kind of message. Timely Publications (which eventually became Marvel Comics) did a very similar thing with Captain America. In his first issue, an entire year into World War II but an entire year before the United States entered the war, Captain America punched out Adolf Hitler (Kirby). Mimicking what Superman had accomplished in a

similar issue, these publications began the trend of showing how American bred heroes were mightier than any real world opposition. Eventually, from about 1942 to the end of the war, somewhere around half of the comics and cartoons produced in America were war related in some way or another (Klein 186). World War II began and provided the industrial background of a modernist world in which superheroes and humans alike are consistently victorious over nature (Murray and Heumann 13).

In the 1940's Max and Dave Fleischer's *Superman* cartoons, produced by Fleischer Studios and later Famous Studios, introduced the landscape of the world as very mechanized and industrialized, framed with very straight lines and metallic colors. Of the seventeen episodes produced for the cartoon series, two are about lawful injustice, four are about thieves and mad scientists, five involve Superman and some facet of the war, but over six contain Superman combatting nature itself in some form or another. Barring the fact that the cartoons mimicked the comics and showed Superman single-handedly defeating World War II enemies like the Germans and Japanese, the Man of Steel primarily uses his power in these cartoons to overcome nature of the present and the prehistoric, like fighting and caging an entire circus of animals (*Terror on the Midway*) or defeating a colossal Tyrannosaurus Rex thawed from the ice (*The Arctic Giant*). However, he faces off against nature most potently when nature itself is being used as a weapon against him by other human beings. In *The Mechanical Monsters*, a mad scientist has hollowed out the inside of a mountain to use as an evil base that Superman must infiltrate and then overcome a shower of molten lava to protect Lois Lane. In another episode, a distraught Native American uses electricity on the tectonic and oceanic plates beneath Manhattan to cause massive earthquakes in an attempt to destroy the land that was stolen from his people (*Electric Earthquake*). Finally, in *The Magnetic Telescope* a mad scientist invents a giant magnet

capable of pulling “comets” close to the Earth for scientific examination, ignoring the warnings of several police officials who state that his “tampering with nature endangers thousands of lives.” The scientist’s response to this is that he cannot allow thirty years of research and spending to go to waste—somewhat mirroring how large corporations refuse to change their environmental practices due to a potential loss in profits—so he locks the police officials outside and then proceeds to pull a comet so close to the Earth that it cannot be stopped, which only occurs because the officers try destroying the machine. The interaction between industry and government here only makes matters worse, as they cannot come to agreement and cannot be reconciled through corrupt business practices. Perhaps, if the mad scientist had bribed the government officials attempting to shut him down, he would have been allowed to continue his experiments in peace. Eventually, Superman saves the day and sends the comet back into space, thus saving the very humans who just put the entire world in danger in the first place. In a sense, Superman serves as something of a “get out of jail” free card, allowing the people of Earth to try their scientific advancements again in the hopes of not destroying the planet this time, a recurring element that will become better defined as Superman’s superhero career transitions into the modern age.

The Golden Age Threat

In terms of thinking about Superman as an environmental villain instead of a planetary savior, we must analyze the mindsets of the authors who are writing about him. Cheryll Glotfelty asks how our concept of nature changes over time and whether or not our understanding of environmental crises seeps into popular culture (xix). For the Golden Age time period of comic book history, it is evident that mankind (or at least America) had very little understanding of

natural crises or the detriment we as human beings were having on the environment and therefore that mentality bled into Superman's character. Other than the Limitation of Liability Act in 1851, which only held the shipping industry liable for incidents at the exact value of any remaining vessels (U.S. Congress, Senate, House); the Oil Pollution Act of 1924, which only stated liability for *deliberate* discharges of oil (U.S. Congress, Senate, House); and a few smoke ordinances passed in major American cities from 1881 to 1904 that limited the amount of smoke from flues and chimneys, no real headway was ever made on true oil or carbon dioxide pollution until 1955 (Tang, O'Loughlin, Roberts, and Dancausse)—ironically the exact same year the Golden Age of Superman ended and the Silver Age began. Industrialization, energy consumption, pollution—none of these were important enough urgencies to prioritize over the largest war ever recorded and the international crises America was facing at the time. If anything, destruction of the environment through industrialization and creation of military weapons, vehicles, and even the atomic bomb was an ally to winning those wars, certainly not the enemy to them.

In exact accordance to what America deemed important enough to fight, Superman too fought against those exact same things. Golden Age Superman was not against the burning of fossil fuels, because he was against the subjugation of the Jewish people under the Nazi regime. He was not against the creation and use of the atomic bomb, because he was *for* defeating America's enemies at any cost. The character's lack of reverence for the environment is because of his absolute reverence for American patriotism. Even the very ideals Superman used to fight for in the original 1940's Fleischer cartoons—truth and justice—were altered once the United States entered the war in 1942 to include “the American way.” And the way Superman is portrayed in his original comics, the cartoons, and even the 1950's television show, the

American way was to jail criminals, stop natural disasters, end corruption, fight for the innocent, and win wars. If America was going to be the most powerful nation in the world, they needed the most powerful fictional hero of the world to rally behind. Thus, Superman became the very embodiment of American ideals and sentimentalities. He was power. He was speed. He was everything America wanted to be in their races and battles against other nations of the world. He was victorious.

However, every single action the Golden Age Superman takes is only for the betterment of people, oftentimes to the detriment of the environment. From his earliest adventures to his latest, Superman is constantly placing mankind on a pedestal above nature. While later on (in the Silver and Modern Age) Superman puts human beings first in the hope that they will be able to save both themselves and the planet, during the Golden Age Superman puts humans first with only the strength and well-being of the nation in mind. Human lives (particularly *innocent* lives) actually take priority over everything else for Superman. Prioritizing human safety is not something that ever changes over the entirety of his comic book career, but began most resolutely in the Golden Age. For example, in *Action Comics* vol. 1 no. 3, Superman saves a coal miner from a collapsed mine and forces the owner to institute safer working conditions, but does not stop the extraction itself (Siegel and Shuster, “Superman Battles Death Underground”). Here, we see that Superman is not concerned with changing the status quo. Mining is a way of life; it is how the United States continues to prosper and grow. Even Superman, under the guise of Clark Kent, benefits from the rewards of mining. Why would he want to stop it? He is merely concerned with the miners’ safety—humanity over nature. To the character, human lives take precedent, but so too does the advancement of human knowledge and scientific discovery. Expansion is the American way. Stopping the mining practices would impede such advancement.

Another example comes in *Action Comics* vol. 1 no. 5 when Superman fixes a dam that is about to break due to flooding (Siegel and Shuster, “Superman: The Big Scoop”). To prevent this, he creates a new aversion dam by breaking a colossal piece of a mountain to divert the waters from a nearby town. He saves the townspeople, but what environmental calamity did he cause in doing so? How many animals lived on that mountain? Similar to mountaintop removal, how much runoff is going to pollute the waters below? Obviously, these are questions the 1939 comic does not give answers to, and the authors never thought of the repercussions—let alone the solutions.

However, both of the aforementioned instances pale in comparison to what Superman did in *Action Comics* vol. 1 no. 11 when he actually spent all night drilling into a deep oil well until it began gushing oil onto the surrounding land. He did this after learning that two crooked oil profiteers were selling phony stock to unsuspecting buyers, one of which committed suicide from his financial losses. After purchasing a large amount of his own phony stock, Superman made it incredibly valuable by drilling a real well and then selling the stock back to the crooked businessmen for one million dollars. He then destroyed the entire oil well in front of their eyes and set it ablaze, ruining their fortune as well as the environment. One of the profiteers said the site was producing “1,000 barrels [of oil] a day” (Siegel and Shuster, “The Black Gold Oil Well” 5). If a typical barrel of oil is 42 gallons and the average life of an oil well is anywhere from 15 to 20 years—and we also assume that the fire burned up all of the oil underground as well since the site was rendered inoperable after the fire—then Superman just burned a minimum of 229 million gallons of crude oil in one sitting. Considering also that one barrel of crude oil burned emits 317 kilograms of carbon dioxide into the atmosphere, Superman also just polluted the air with, at minimum, 1.73 billion kilograms of CO₂. That is about one third of the total CO₂ emissions the entire United States of America uses in one day modern time.

While there are numerous other examples of Superman prioritizing mankind over nature in the 30's, 40's, and early 50's, the problem lies partially in his ignorance and naivety of the problem as a whole. Superman is bound by the knowledge of his creators, which when it came to pollution in the period and aftermath of World War II, was very limited. Real pollution acts would not begin getting instituted until the mid-50's through the 90's. There also appears to have been a tendency to make Superman into this godlike character concerned more with control over the environment and punishment for criminals than actual improvement of the human race as a whole. Earlier, I compared Superman and Moses as having many archetypal similarities to one another, but Superman in the Golden Age seems to transcend these characteristics by thinking himself a being above reproach. Moses was just a herald of God's will. It was God actually causing the plagues and natural disasters to befall and punish the Egyptians. Superman, on the other hand, takes the role of a god to put an end to any natural disaster befalling human beings, only punishing the environment and any human manipulating it. Only Superman has the power to stop it when it gets out of control, even though he does not realize the detrimental effects he is having on the environment through his actions. None of this, however, is to say that naivety gives the character a pass to do whatever he wants to the environment, but it does give insight into why writers had him commit such reckless acts of pollution and waste in the first place.

The Silver Age Joke

The Silver Age era of American comic books became predicated around the Cold War concerns of the American people, advancement of space travel, and focus on technology. It was also the point when DC Comics abandoned the world war message almost entirely in favor of giant monsters, incomprehensible story plots, and the ability to transform Jimmy Olsen into

every kind of animal, monster, superhero, and supervillain imaginable (Binder, Burnley, Swan, and Weisinger, *Superman's Pal, Jimmy Olsen*). It was a time of lunacy and ridiculousness that marked a steady decline in sales from the comic book issues of the 1940's and early 1950's—supposedly due to the fact that these stories were now prioritizing the science fiction aspects of these characters over the magical or godly aspects (Gabilliet 55). However, another reason for the transition to the more lighthearted and comedic side of comics came in 1954 with the release of Frederic Wertham's *Seduction of the Innocent* where he asserts that comic books, particularly the gritty and sometimes brutal realism of certain Golden Age comic books, were the reason for a great majority of juvenile delinquencies and child maladjustment (10). As parents and citizens became more sensitive to this theory, there came an increased call to censor the violence in comic books, leading to the formation of the Comics Code Authority by the Comics Magazine Association of America to review and approve comics by their own set of rules before being limited by the government (Nyberg). This transition from Golden Age to Silver Age led to an era of innocence predicated on optimism, with crime and more realistic elements heavily regulated in favor of giant monsters, aliens, and robots.

In addition to increasing censorship, scientific explanation became a recurring element in the Silver Age when detailing and describing character backstories, how they received their superhuman abilities, and how they advanced those abilities throughout their respective series, none of which became as popular as the Golden Age tales that needed no explanation and focused more heavily on real-world events and issues. Even though Superman's entire history began as a scientific tale of space and aliens, it was rarely ever expostulated upon, leaving readers to think he had godlike powers for whatever reason they chose. Conversely, characters like Barry Allen as the Flash, Tony Stark as Iron Man, and the Fantastic Four all saw their

introductions in this time period with their histories and powers very precisely explained. The Flash got his superhuman speed from a combination of lightning and chemicals (Kanigher). Iron Man used his genius intellect to construct advanced robotic exoskeletons to wear into battle (Lee, *Tales of Suspense* no. 39). The Fantastic Four received their powers from cosmic radiation that transmuted their DNA (Lee, *Fantastic Four* no. 1). These and many other characters had histories rooted in science, not mysticism, and it was the science that seemingly served to drop reader interest that DC transitioned back to having their heroes tackle real world issues.

According to DC Comics, their Silver Age ran from 1955 to 1970 when it then transitioned into the Bronze Age of Comics that lasted from 1970 to 1985. However, in each of these particular ages, the then canonical Superman of Earth-One remained the same character throughout and became distinguished from the Golden Age Superman of Earth-Two—with the two superheroes often crossing their own respective universes to meet and fight universal and even multiversal threats together (Wolfman, *Crisis on Infinite Earths*). These cooperative adventures together also took place around the time that Silver Age Superman received a more expansive backstory concerning the destruction of Krypton and the acquisition of his superpowers. While in the Golden Age, Krypton merely exploded due to the planet's "old age," in the revamped history of Superman, Krypton was destroyed due to the destabilization of the planet's uranium core (Samachson). Jor-El, Superman's father, tries to warn the Science Council—another name to highlight the prioritizing of science in the Silver Age—of the impending doom, but they refuse to listen to his warnings or allow him to lead an evacuation of the populace off world. Jor-El's expanded background leads to the same story given to us in the Golden Age where Kal-El is rocketed from the exploding planet to Earth and raised by farmers Jonathan and Martha Kent. Thus, the retold story of the annihilation of Krypton leads to the

Silver Age's primary focus throughout a majority of its tenure in comic book history—the concentration of atomic weaponry and scientific advancement over that of criminal justice. And that environment is nowhere to be seen or heard of.

Following the aftermath of World War II and the creation of the atomic bomb, the United States saw a competition with the Soviet Union to build the biggest bombs and advance the fastest scientifically. This competition became reflected in the comics of the 1950's and 1960's as they began introducing more and more scientific concepts into the continuities of their storylines and altering character backgrounds to reflect their scientific superiority. The change to Krypton's destruction serves two purposes. In the nuclear arms race against the Soviet Union, Krypton now serves as an example for the largest atomic bomb in existence, exploding due to the repetitive reaction of chain-impulses, destabilization, and meltdown of an entire planet-sized uranium core. Secondly, what are the possible dangers of harvesting so much uranium from our own planet and making city-leveling bombs out of it? The metaphor that is Krypton serves as both an example of the United States' superiority over countries like the Soviet Union (a planet-sized nuke) as well as a warning to the United States itself concerning unintended self-annihilation (the dangers of working with such volatile elements). This is also the time when Kryptonite became more prevalent in the comic books, first created in an unpublished 1940 issue of *Action Comics* written by Jerry Siegel originally entitled "The K-Metal from Krypton" and being expanded upon in the 1943 radio series *The Adventures of Superman* ("The Meteor from Krypton") and the 1949 issue of *Superman* vol. 1 no. 61 (Woolfolk). Kryptonite, and its numerous variations, are radioactive pieces of Superman's home world that can weaken and even kill him if he is exposed too long to its effects. The authors of this mineral seem to be conscious of the dangers of harvesting and using radioactive materials as weapons, as if something

radioactive can kill Superman, then who can it not kill? This literary warning to the American government and even the Soviet Union seems to be telling of the growing fears the regular populace had about such drastic scientific development with nuclear armaments, as well as the potential for mutually assured destruction.

At the 2006 Comic-Con International held in San Diego, California, Randy Duncan explained that “a lot of sociological work shows how superheroes change to reflect society,” informing the shift between the war torn nationalism of the early 1940’s Golden Age Superman and the obsession with scientific achievement during the 1950’s Silver Age. The nuclear arms race, the space race, technological advancements, and medical discoveries all demonstrate how fixated America became with being the first and the best in absolutely everything they set out to achieve. And whether they achieved it or not, Superman always did in his own comics, embodying those ideals of being the first and best. The Silver Age was also the era that Superman’s superpowers saw an incredible leap in power. Whereas the Golden Age Superman was strong enough to punch mountains, the Silver Age could sneeze dead solar systems out of existence with his super breath (Siegel, “The World of Mr. Mxyzptlk”).

In short, Superman became far more powerful than the original authors ever intended him to be—to the point that the tone of his comics became comedic rather than dramatic and authors found it increasingly more difficult to match him against threats that would actually be any threat at all. This lack of conflict was further complicated by various writers having Superman randomly introduce new superpowers to his already vast repertoire. Super-Hypnosis (Bridwell and Hamilton) and Super-Mathematics (Bernstein, “The Cry-Baby of Metropolis”) are just two of the “super” things he could make up on the spot to defeat any enemy, continually creating new abilities with the prefix “super” attached to them to dispatch foes. They were usually common

abilities enhanced to superhuman levels (like mathematics). But therein lies the implied narrative. If Superman does everything in a super way in literature then so too should America be able to do the same in reality, which plays too into the Cold War race against the U.S.S.R. to be the best. How powerful Superman became when compared to his Golden Age self should be directly proportional to how quickly America should advance from its World War II self. With Kryptonite serving as a warning that even the most powerful character can be subdued by the effects of radioactive material, the increase in power was the most important aspect to take note of for Americans concerned with competing against the Soviet Union in the Cold War.

Superman saw an incredible leap in both knowledge and power, but so too did America. What then did the Soviet Union have that could compete? Superman represented the very definition of being undefeatable. Therefore, in the minds of the readers, America became just as undefeatable.

However, even though scientific advancements became the central focus for most of the comic book genre during the Silver Age, they also exhibited a far more humorous and comedic role in their storylines than the Golden Age. Plotlines that transformed helpless Jimmy Olsen into a myriad of monsters and creatures became commonplace for Superman issues. Similarly, the campiness of creating superpowers on the spot with titles like “Super-Mathematics” became Superman’s method of fixing any kind of ludicrous problem he was facing at the time. This era of lightheartedness and absence of real threat to the character marked the same lightheartedness of Americans in the 1950’s and 1960’s, often considered to be the “golden age” of sorts for America. The country saw the largest economic boom following World War II as well as a return to “traditional” lifestyles and “equal” opportunities for the American dream. However, this period also marked a steady decline in readership among the comic book fan base, causing yet another overhaul in the way the character of Superman interacted with the real world. Instead of

keeping the godlike being who intervened and instantly fixed anything in a single issue of any given comic, the authors decided to revert back to the Golden Age's use of real world issues to make the character and his trials more relatable.

The Bronze Age Conclusion

The Bronze Age began in 1970 and lasted all the way to 1985 just before the *Crisis on Infinite Earths* that completely rebooted the entire DC multiverse into a new singular universe labeled New Earth. Still keeping the same Superman of Earth-One as their primary Superman, the Bronze Age was when authors began reverting back to darker plot elements and more socially relevant storylines (akin to those found in the Golden Age) that featured real-world issues: racism, drug use, alcoholism, urban poverty, and the onset of environmental pollution. Abandoning the rules of the Comics Code Authority, DC and other comic book companies began reverting back to the Golden Age style of storytelling. However, while the Golden Age handled these real-world issues with a no nonsense, matter-of-fact, good versus evil justice that always saw the “bad guys” losing and Superman winning, the Bronze Age introduced more complex concepts that began painting the scale gray. Instead of leaping with corrupt business officials in hand all the way to a jail cell as he had done in 1938 (Siegel and Shuster, “The Man Who Sold Superman”), Superman would be forced to stop the immediate threat and then deal with the villain behind it who was being protected by the criminal justice system's requirement for evidence. As the readers of their comic books became more aware of the societal issues surrounding them, it became less and less possible for comic writers to have Superman ignore those real world problems in favor of saving Jimmy Olsen from whatever monster he had turned into that week, or whatever superpower Superman decided to develop that month.

Toward the very end of the Bronze Age in 1985, during the publication of *DC Comics Presents* vol. 1 no. 85 written by Alan Moore, Superman encounters Swamp Thing for the very first time. Swamp Thing, embodied through the human character Alex Holland, is an avatar for the environmental power known as The Green, which is an elemental force that connects all forms of plant life on Earth. The Green is experienced by plant elementals as an ethereal realm inhabited by the collective minds of the Parliament of Trees, former plant elementals that now govern the Earth and decide who protects it while living. The Green chooses protectors for itself to wield its power against threats to the planet, which is most often mankind. During their Bronze Age story together, Superman encounters a meteorite with an extraterrestrial fungus from his home world Krypton that infects him and is supposedly causing him to die. Knowing this, and after losing his ability to fly, Superman takes the meteorite into the swamps of Louisiana to get rid of it, but on the way, begins to grow sick from the fungus and crashes his car into the swamps. Swamp Thing finds him, but Superman awakes in a feverish hallucination and attacks Swamp Thing, blasting him and the entire swamp with his heat vision. Swamp Thing uses his connection to The Green to establish a connection with Superman, calm him down and rid him of the fungus, then returning him asleep to Metropolis. Upon waking, Superman does not remember the encounter and instead believes proudly that he overcame the extraterrestrial plant fungus himself.

This issue illustrates a lot about the relationship between man and the environment—most prominently in its debatable antagonist. Is the enemy of this issue the fungus or Superman? Both beings are alien in origin and neither belongs on the Earth, both of them being on the planet in this issue actually causing more harm to the environment than good. However, while Superman never would have burned down the swamp in Louisiana if not attacked by the fungus,

the fungus also would have never been able to attack Superman if he was never on the planet in the first place. Before this issue, there is very little in the way of Superman himself ever being a proponent for the natural world other than a public service announcement here and there for children to stop littering (Schiff). Therefore, which is to blame for the destruction of the swamp?

Either way, it becomes apparent that Superman is not the hero in this issue, even if he believes he is by the end of it. The true hero is neither fungus nor man, but a combination of plant and man. Using his connection to The Green, Swamp Thing is the only reason Superman is able to overcome the fungus and not be killed by its destructive influence. It is interesting that the authors chose a fungus to be the primary threat of this issue too, as fungi are some of the only naturally occurring enemies to both man and plants. If left unchecked, they can overtake and kill both completely. The use of a common antagonist against both man and nature appears to be a commentary on how only man standing alongside nature, as well as nature accepting man's interdependence, can overcome any threat standing against either one alone. Swamp Thing represents a perfect symbiotic relationship with the environment. As an embodiment of the Earth, he literally is the planet and cannot be killed without the planet being destroyed. Conversely, Superman's infection represents an environmental force trying to destroy man, with Superman's attempt to combat it alone man's attempt and failure to control nature. Swamp Thing is the relationship man could have with nature while Superman represents man's current relationship as a combatant of it. Superman's pompous belief in the end that he conquered the fungus all on his own is telling of how much mankind places themselves above the environment instead of alongside it, often ignoring the fact that the environment itself is man's very reason for life with its supply of oxygen, water, etc. On the other hand, Alec Holland as Swamp Thing realizes man's potential for connecting to The Green and seeks to create that relationship by

saving Superman from an enemy that is both dangerous to man and the environment. If Superman represents mankind's mentality of the era as a force to overcome and subdue nature, Swamp Thing represents a possible future mentality of working together alongside it for mutual benefit.

While the Bronze Age does manage to bring the "Pre-Crisis" eras of Superman to a close on a slightly more environmentally friendly note (at least in terms of man and nature working together), the majority of the Golden, Silver, and Bronze Ages of Superman comics were not environmentally focused whatsoever, at least not in terms of actively protecting it. In fact, the eco-periphery of Superman's past suggests that the character took the role of nature's destroyer, manipulator, conqueror, and enemy rather than its savior, ally, and friend. He punches the tops off of mountains, burns up entire oil fields, and sets ablaze entire swamps without ever batting an eye. By Superman prioritizing man's life over nature's life throughout this part of his career, he becomes antagonistic to both. After all, without the environment, man could not possibly survive. But without man, the environment would thrive. And without Superman constantly debilitating that environment? It would perhaps soar. While environmental awareness was invented in the 1960's and became more widespread in the 1970's with the creation of Earth Day and other environmental laws, it was only acknowledged through the PSA-style Superman telling children not to litter and sometimes stopping widespread oil spills in the ocean, like in the 1983 film *Superman III* (Lester). Ecocriticism did not become a founded literary study until the 1990's when the Superman of the Modern Age reigned supreme, and he took a far more active interest in protecting the environment than either of his previous counterparts.

CHAPTER 2 THE MODERN AND NEW AGES: THE REBIRTH OF SUPERMAN FOR THE PLANET

"You have every reason to be outraged, Mother Earth. You have given them everything. They are tiny and stupid and vicious, but please, listen to them. I have always loved you. Though I was born a galaxy away, I have always served you. The same power, the sun's power, fuels us both. You hold it here, you store it... I beg you... For a suffering world. Release it. You are so generous... I swear your adopted son will honor you."

--Superman

(Frank Miller, "The Dark Knight Falls")

During the 1985-86 publication of *Crisis on Infinite Earths*, the DC multiverse saw a massive reboot the likes of which had never been done before. Instead of simply transitioning from one alternate Earth to the next as they had done in the past (Golden Age to Silver Age), the writers decided to condense all of the multiverse into a singular universe that would contain every single character. The new world became known simply as New Earth in the comic books, and it was the only one in existence until eventually splitting back into the multiverse following the events of *Infinite Crisis* in 2005 written by Geoff Johns. All of this was known as the Modern Age until 2011 when DC Comics decided to reboot their entire multiverse once again following the events of *Flashpoint* (Johns). The New Age was born and dubbed as the New 52 where even newer versions of every character existed, even a new Superman of the now called Prime Earth (or Post-Flashpoint) universe. However, while I will be referring to this New Age Superman of the Post-Flashpoint continuity in my analysis of the character as a whole, the primary target of my examination will be the Modern Age Superman of the Post-Crisis continuity that existed from 1986-2011. I will be using this Superman because his career lasted much longer than New Age Superman's and because he has recently been transported to Prime Earth, along with his wife Lois Lane and son Jon, following the events of *Convergence*, an event that saw the return of some Post-Crisis continuity (Jurgens, King, Lobdell, Pagulayan, and Van Sciver). Also,

following the death of New Age Superman, Modern Age Superman has since taken his role as the superhero of Prime Earth and is once again the Superman currently being written about in DC Comics canon.

Upon recreation in 1986, the Superman of New Earth (often called Post-Crisis Superman by fans) saw a youthful decrease in age, a slightly revised backstory, and a massive depowering from his Silver/Bronze Age version, though he would later regain a large portion of that power. This Superman was unlike any of the others before him in that he was conceived on Krypton but actually born on Earth through means of being placed in a “birthing matrix” that finished his gestation period during the trip to his new home (Byrne 6). Having still been found by Jonathan and Martha Kent in Smallville, Kansas, and still keeping the same moral compass and heroic attitude fans knew him best by, this Superman was both a child of Krypton and planet Earth simultaneously. And though this would later be retconned in Mark Waid’s retelling of Superman’s backstory in *Superman: Birthright* and later again in Geoff Johns’ own retelling in *Superman: Secret Origin*, it initially served to make Superman both godly powerful and humanly vulnerable all at the same time.

The explanation behind Superman’s superpowers also sees a more realistic revision during this time period. Like with the Silver Age, it is explained scientifically that Superman draws his power from the Sun. However, unlike the Silver Age, there is still some mysticism left behind the explanation that both defies the laws of nature and breaks the scientific laws of conservation. Superman can not only absorb the solar radiation of the yellow sun, but also energy from blue stars, white stars, quasars, and even plants themselves. And while he does absorb the energy into himself, he then “hyper-metabolizes” it to create more of the energy inside his own body, allowing for even greater feats of strength, speed, durability, and energy

output than the actual amount of solar energy he absorbed would normally allow (Morrison, “World War III” 32). It is also explained that Superman continually grows more powerful the longer he is living under a yellow sun with the upper limit of his power being practically infinite as shown in *DC One Million* (Morrison, “Death Star”). With Superman’s means of absorbing solar energy stated while simultaneously breaking the laws of conservation, authors effectively combined the scientific explanation with the mystical one for Superman’s power, turning him into a plant-like being that photosynthesizes solar radiation for growth and power and then stores it inside his cell like a solar battery. If periodically plugged into a powerful enough thermonuclear reactor that could drain the energy from Superman’s cells and store it efficiently, Superman would seemingly be capable of providing an infinite amount of sustainable energy to the entire planet for the rest of his natural existence, in turn solving the environmental crises of climate change, pollution, and the destruction of ecosystems all within a single second of plugging in.

However, there is another argument as well—that Superman does not even need to give up his own energy to save the planet. He could do it all with brute force and superior leadership of Earth’s people alone. And he could accomplish it almost as fast as he could siphoning off all of his power into a machine capable of storing it for renewable energy. He would just have to become a dictator first. A Superman controlled society actually occurs in two DC stories entitled *Superman: Red Son* written by Mark Millar as well as all of the *Injustice: Gods Among Us* issues written by Tom Taylor. While both stories involve Superman taking control of the planet, becoming a despot, and implementing a totalitarian world government where he is the sole ruler, it is *Injustice* that best illustrates the points of bringing about a better world through forced peace and law following rather than through inspiration and protection. There may be no freedoms or

choices for the people to ever make again, but the planet's ecosystems will be saved indefinitely if Superman's relative immortality is to be believed from stories like *Kingdom Come* (Waid and Ross) and Grant Morrison's *DC One Million*. However, the cost of humanity's freedom, even for the planet's well-being, is too high. As Frederick Turner points out in "Cultivating the American Garden," human beings may be distinct from nature, but they are not entirely separated from it (40-41). Therefore, the argument could be made that, by subjugating humans, one is also subjugating nature itself. And even if humans learn to accept this oppression and live their lives under it, if Superman were ever to die or be killed, how would their codependence on his rule then lead the planet into even worse disaster than before? Without their overreliance on Superman, humans would fall back into their wasteful ways and be forced to use more rapidly what they ever had before Superman's tyranny to make up the difference.

Nerd Math

However, assuming Superman does not rule the entire planet under a dictatorial government, the only other option for Superman to instantly fix all of mankind's problems is for him to invent a machine capable of absorbing and containing all of his energy at once. We already know these kinds of machines exist within the futuristically scientific world of DC Comics with a character like Dr. Shay Veritas creating a machine capable of imparting the mass of the entire planet for a simple workout regimen (Lobdell 1). Therefore, the only thing left to figure out is exactly how much energy Superman produces every moment of just being alive on Earth.

Having absorbed yellow solar radiation for many years while living on Earth, Superman's powers have steadily evolved over the decades to also include flight, x-ray vision,

heat vision, super breath, super hearing, as well as a variety of other sensory and esoteric powers. As stated and reinforced in the comic books of the Modern Age, all of these powers are gained through the constant absorption and hyper-metabolism of yellow sunlight through Superman's Kryptonian cellular structure, and it is what allows him to perform physically impossible feats. Also, it is heavily implied that in Frank Miller's *Dark Knight Returns* series that Superman actually absorbs non-ionizing radiation from the Sun just like plants do and that ionizing radiation actually weakens him, continuing the narrative that Superman's solar absorption is actually quite similar to the photosynthesis plants use to grow.

Although there have been several incarnations of the character, all four canon incarnations eventually end up with the same super powered arsenal and are all similarly powered by their system's yellow sun. Thus, statements made in any era of Superman's comic book career regarding his power or ability to absorb sunlight can be easily transposed onto the other three canonical incarnations, as they are technically the same character, just in different universes of DC's infinite multiverse and all reimagined to face their time period's core issues and conflicts. However, for the purposes of this calculation, I will be using the New Age Superman from 2011-2016 and the Modern Age Superman from 1985-2011 who recently made a reappearance in 2016 and fused with his New Age counterpart to create an entirely new Superman known currently as Reborn Superman (Jurgens, "Superman Reborn"). As the New Age Superman did die in canon, the Modern Age Superman has been stated to be just as powerful as his Prime Earth counterpart and currently absorbs solar radiation similarly to how he did thanks to Swamp Thing attuning his vibrational frequency to the tune of the Prime Earth universe. Therefore, any statements used for New Age Superman will be conflated to fit with Modern Age Superman's power scale.

Barring that time in 1998 when Superman lost all of his powers and became a being of pure energy that needed a containment suit to keep his body from dispersing—a relatively skimmed over period in time of comics known as *Superman Red/Superman Blue* written by Dan Jurgens—very little has ever actually been stated about Superman’s capability to absorb solar radiation. In fact, other than the numerous statements by writers that he absorbs and processes yellow sunlight, there have never been any exact explanations as to how much energy his body actually absorbs or how much he could actually release at any given time until DC’s most recent reboot of their franchise in 2011 dubbed the New 52 (Johns, “The New 52!”).

In the 2014 series *Superman Unchained* by Scott Snyder, Batman states that Superman is consistently absorbing 140 gigawatts of solar radiation for any given second he is on the planet (10). If we assume this statement to be true, as intended by the author, then Superman should only be capable of superhuman feats directly proportional to the amount of energy he has absorbed in his lifetime. In the New 52 relaunch of DC Comics, Superman is 27 years old and has been absorbing solar radiation since his arrival on Earth as an infant. As there are 852,036,300 seconds in 27 years and 140 billion Joules in 140 gigawatts, multiplying these two numbers together, we can determine that Superman should only be capable of exerting approximately 119 quintillion Joules of energy for any given feat. Scientifically notated, that is 1.19×10^{20} Joules of energy, which is enough to supply 20% of the entire world with clean energy for an entire year according to the aforementioned 2010 statistics on global energy consumption.

However, Superman’s 119 quintillion Joules absorption rate is proven to be untrue by many of the feats he has performed during his tenure as a superhero. During a calculation of the energy used to overcome drag forces for an eight hour flight, doctoral candidates at the University of Leicester determined that Superman must either absorb more than just solar

radiation or break the laws of thermodynamics entirely to create more energy within himself (Garratt-Smithson, Muir, Watson, and Sczykulska 2). And since the former has never been stated to be true by any of the writers from DC Comics and the latter has actually been stated to be true by Grant Morrison, then Superman must indeed create more energy from the energy he absorbs. However, unlike the doctoral candidates of Leicester, instead of estimating the energy required to maintain flight, I will be calculating how much Superman should actually be able to bench press exerting only the amount of energy he has stated to absorb. Since super strength is Superman's very first superpower, this seems appropriate given the fact that Superman's greatest feats have and always will be his feats of super strength. After all, he is a being literally capable of pushing entire planets around with his bare hands (Kelly, "Trial by Fire").

Superman is 6'3" in the comics and his arm length is 24 inches from the top of the shoulder to the wrist, which would be .6096 meters in length (Snider 178). Newtons are a unit of force that can be interpreted as mass under standard Earth gravity. Every 1 kilogram is 9.81 Newtons pressing downward on Earth. And Newtons can be calculated by dividing Work in Joules by distance in meters, since every Joule per meter is equivalent to one Newton. Using the energy Superman should be able to expend, as stated by his 140 gigawatt absorption rate, as well as his arm length for bench pressing, we get:

$$1.1928508e+20 \text{ Joules} / 0.6096 \text{ meters} = 1.9567762e+20 \text{ Newtons}$$

Converting Newtons to kilograms by dividing the number by 9.81 and converting kilograms to short tons by multiplying by 907.185 for the imperial equivalent, Superman's maximum lifting strength should be approximately 21.9 quadrillion tons ($2.19e+16$). However, this is far from what he has proven to be his maximum lifting capacity, as in *Superman* vol. 3 no. 13, he was hooked up to an incredibly futuristic machine that allowed him to bench press the mass of the

Earth for five days straight devoid of any sunlight, which would halt his regeneration of strength and stamina (Lobdell 1). The mass of the Earth is approximately 6.58 sextillion tons (6.58e+21), which is already much higher than what his calculated maximum above states he should be able to accomplish. However, he was bench pressing the planet for five days straight, not just for one repetition. And if we assume each repetition to take an average of one second, then he bench pressed the Earth 432,000 times, since there are that many seconds in five days. The Epley Formula was created for body builders to determine their “one-rep maximum” by performing multiple repetitions at a lower weight and then calculating how much they would actually be able to lift (DiStasio 14). Using this accepted formula, we can calculate the actual limits to Superman’s lifting strength to be:

$$\text{lbs. } (1 + \text{repetitions} / 30) = \text{one-rep maximum}$$

$$1.31664252e+25 \text{ lbs. } (1 + 432000 \text{ reps} / 30) = 1.8960357e+29 \text{ lbs.}$$

When converted back to short tons, Superman’s maximum lifting strength soars to approximately 94.8 septillion tons. To put it in perspective, that is enough to push approximately 47 Jupiters out of orbit and far more energy than he should be capable of outputting based on the 140 gigawatts he should only be absorbing. Based on this, Superman must indeed hyper-metabolize the solar radiation his body absorbs by involuntarily creating more of it inside his own body. Basically, he is the perfect thermodynamic engine, breaking the laws of physics completely and creating energy from nothingness.

So, by taking the amount of Joules Superman has been proven capable of exerting with his five-day bench pressing the planet feat and dividing them by the number of Joules he should only be able to exert based on Batman’s 140 gigawatt absorption statement, we get:

$$5.1413593e+29 \text{ Joules} / 1.1928508e+20 \text{ Joules} = 4,310,144,487$$

This means the ratio at which Superman absorbs and hyper-metabolizes solar energy is 1:4,310,144,487. That is to say for every second Superman is absorbing 140 gigawatts (140 billion Joules) of solar radiation, multiply that by a factor of 4,310,144,487. Doing so provides us with a calculation that has Superman creating approximately 603 exajoules per second—603 quintillion Joules ($6.03e+20$) of clean sustainable energy every single moment that he is alive and residing on the planet.

Given the math above, Superman produces just over that at 603 exajoules per second. Basically, if human beings could invent a thermonuclear reactor capable of containing and dispersing that much energy at once, Superman could take one second out of his day to power the world for an entire year. He could do it with his Heat Vision—a power that focuses the solar radiation he has absorbed and then emits it through his eyes. Or, if humans could contain it, he could release it with his new superpower the Super Flare—which forcibly expels all of the solar radiation stored inside his entire body all at once, making him essentially human for a day (Johns 12-20).

Injustice for Environmental Justice

The *Injustice: Gods Among Us* comic series began after the announcement of the 2013 video game of the same name. Written by Tom Taylor, the comic line takes place five years before the video game's storyline in an alternate reality known as The Regime. The Regime is the same Earth as the mainstream continuity, except that it diverges right when Joker uses a Kryptonite-laced fear toxin on Superman that tricks him into killing his wife Lois Lane and their unborn child—both of whose heartbeats are linked to a nuclear bomb somewhere in Metropolis. With the death of his wife and child also comes the destruction of his entire city, and it is enough

to drive Superman insane. Rushing to where Batman is interrogating the Joker, Superman bursts through the wall and kills the Joker instantly, breaking his vow to never kill. This act of violence begins Superman's new plan to take control of the world and outlaw all war, all crime, and anything that threatens the people or safety of the planet. He calls this The Regime. Although Batman is against him and argues that peace through control is not real peace, most of the Justice League sides with Superman and helps him build his new world order by dismantling nuclear devices, overthrowing tyrannical governments, and stopping worldwide threats. However, Barry Allen (The Flash) questions Superman on escalation over a game of chess. He asks him where he plans to stop with this. Superman does not answer as Flash continues on with a series of escalating hypothetical scenarios, such as killing those that break any law at all, not just the ones that deserve capital punishment.

Flash's question is an appropriate one since a dictatorship like the one Superman is imposing is bound to be met with resistance. And with this new order, where does Superman draw the line on crime and punishment? Is it the death sentence for every crime or just the worst ones? Who decides what the worst crimes are if there are no governments to decide upon the judicial system? After a series of his own examples, Barry finally ends with, "Then we kill anyone who doesn't recycle. Checkmate" (Taylor, *Injustice Year 1*). Flash's example may seem absurd, but it is a valid question. It takes environmental safety to its absolute extreme in that, if one does not have enough regard for the ecosystem to recycle trash, they will be put to death for it. Superman is systematically imposing a system completely the opposite of what he once stood for. Whereas he used to place human lives before the environment in every situation, now it is the environment whose safety completely undermines the human beings. However, that is not Superman's true motive for enacting his regime. While the environment will benefit, his true

motive is a sense of vengeance against all of humanity for allowing his wife and unborn child to die. He has saved them countless times and this is how he is repaid? Superman of the *Injustice* world may hide behind the fact that his new world order is a safer one for both man and nature, but his true reason for doing so is purely selfish and egotistical. He becomes a dictator out of personal loss, not out of any loss the planet itself has suffered. He has watched human beings exploit the Earth for years without ever lifting a finger. It is only after he loses something he loves that he deems mankind unworthy of protecting anything and condemns them to a life of servitude under his rule.

In Year 2 of *Injustice*, Batman has started an Insurgency against Superman's new world government where he alone is ruler while the Guardians of the Green Lantern Corp on Oa prepare to confront and depose Superman from his self-appointed throne. Green Lantern Hal Jordan attempts reasoning with them by stating that, "With Superman taking a more active role, countless lives have been saved. And not just through ending violence. . . . new ways to stamp out hunger and implement renewable energy on a global scale" (Taylor, *Injustice Year 2*). With Superman implementing a despotic regime, he was able to put an end to violence, hunger, and the global energy crisis within a single year. As Hal points out, countless human lives have been saved, but so too has the planet been saved by ridding the world of waste, the unnecessary use of energy resources, and the release of greenhouse gases. In one year, Superman is able to accomplish through force what over seventy years of publication history could not solve through inspiration. His methods are effective. Even despite Batman and a select few others working against him in a rebellion, Superman continues to make the world a better place to live, albeit with basic human rights taken away. Even Swamp Thing sides with Superman, as in Year 3 of *Injustice*, he declares to Batman that "Superman's cause will save The Green and that is my only

concern” (Taylor, *Injustice Year 3*). Swamp Thing literally is the life force of the planet Earth itself. He is its strongest plant elemental. By siding with Superman, it is tantamount to the very planet siding with Superman. At least in the alternate reality of *Injustice*, Tom Taylor seems to be suggesting that Swamp Thing no longer considers human beings a necessary part of the planet. They can be subjugated, especially if it means the environment of Earth will be saved. Swamp Thing does not care about Superman’s reason for doing any of this. It is all means to an end. As stated, his sole purpose is to protect The Green (the planet’s ecosystem), and the way for him to do so most effectively is to rid the world of choice—human choice. By removing their free will and ability to make decisions on their own, Swamp Thing agrees with Superman that the world will be saved unquestionably as opposed to the former mere possibility of it being saved. Taking the choice out of human hands is the only way not to gamble with the planet’s future, in turn saving both The Green and the people living on it.

As mentioned before, this is a complete shift from the normal Superman we are accustomed to reading. This is not the Superman that cares about humanity above all else. This is the Superman who cares about the law above all else, and as an extension to it, the environment above mankind. Superman says often and loudly that he is doing everything he is doing to protect the people of Earth, but this is proven false as he consistently kills people throughout the comic series who disagree with him. He incinerates a group of Joker sympathizers and consistently kills fellow heroes who turn their back on him. Even Swamp Thing, who sided with Superman, is later dragged into the DC equivalent of Hell after Batman and John Constantine summon Trigon (the devil) to attack Superman. The Swamp Thing is the planet and the message here seems to be twofold: either that the Earth itself has literally gone to hell under Superman’s rule or mankind’s defiance against Superman’s rule is further dragging the earth to hell. While

Swamp Thing and Superman do not directly interact in the pages of *Injustice* (as all of their interactions have taken place off panel), it is evident from Swamp Thing's conversation with Batman that he regrets nothing in siding with Superman and makes his choice solely with the planet in mind. In fact, in my own estimation, it is actually Batman and John Constantine's fault that Swamp Thing gets sucked into hell in the first place, since they were the ones who summoned Trigon. Batman's Insurgency against Superman is also a very small group of heroes and villains working together. Whether they have a choice or not, very few regular citizens actually side with Batman until they see Superman's violent nature televised, and even then, it does not amount to anything. Initially, they are scared, but they get over it fairly quickly. The comic line makes it appear as if human beings actually have an increasing desire to be subjugated, forced to live under a despotic rule, and have every single one of their needs met for them. There is no crime because there is no desperation. There is no desperation because there is no poverty. There is no starvation. No sickness. No energy crisis. No needs that have not already been met by Superman alone. Human beings are, for lack of a better term, lazy. If someone else will do it for us, then why exert the effort to do it at all? Results tend to be the primary focus of human achievement. Results are why businesses will often take shortcuts for their bottom line and why the environment tends to suffer when such shortcuts are taken. Procrastination also seems to be a key trait that permeates throughout the human race, and the same reason businesses like big oil and coal do not care about the environment. If the planet is not exploding right now and the results are being achieved, then that is a problem for the future to handle—the exact same mindset the Kryptonian Science Council had when Jor-El warned them of their planet's imminent destruction.

However, while the comic series makes it seem as if Superman is helping both the planet and its people through his regime, it is simultaneously dropping hints that he is actually leading it further into destruction. Even if Batman and some of the other superheroes were not fighting against him for the five years leading up to the start of the game and his entire operation went smoothly, if he ever did actually die, the people of Earth would be left without their leader and forced to make it work all on their own. The people of Earth did not bring about their own salvation; Superman did it all for them, and therefore, they would not be prepared to continue making it work all on their own. This potential overreliance appears to be a commentary on Plato's notion of the "philosopher kings" in *The Republic* and Karl Popper's assessment that the utopia Plato is describing actually gives rise to totalitarianism. For Plato, the most likely kings to create a perfect society will be philosophers who study and understand the pursuit of philosophy fully and adequately (*The Republic*, V.473d). Superman's devotion to wisdom and his pursuit of knowledge could certainly classify him as a philosopher, with his rise to power and creation of a utopia in the *Injustice* storyline placing him in the ranks of Plato's philosopher kings, however, Popper argues that Plato's philosophy of idealism and social engineering will give rise to dictatorships, referencing both Adolf Hitler and Joseph Stalin in his book *Poverty of Historicism* (73-74). Ironically, the Superman of *Injustice* falls right in line with the two enemies another universe's Superman fought to defeat, proving Popper right in that by creating a utopian society he did have to become a dictator, something Superman's parents never wanted for him to become.

Upon rocketing her son away from Krypton, Lara Jor-El, Superman's mother, sends a message with her son that applies all too succinctly to the circumstances demonstrated in *Injustice: Gods Among Us*:

“Believe in truth. Believe in justice. Believe in the hope for their greatness. And if, through your actions they yearn to be great, too, then you will have done far more for them by making all their burdens your own. Do not fear to help them where they need help, but do not impose yourself on them. Gods can become devils far too quickly. Reliance on your own powers will destroy them. Belief in your values will give them strength.” (Wolfman, *Superman Returns* 16-17)

Lara’s message highlights everything she wishes her son to be as the Superman of his new world, but it also acts as a warning for what can happen when Superman takes control and imposes his power on the people of Earth rather than offering it freely. In the wake of their planet’s impending doom, both Lara and Jor-El seem to understand the same basic concept—that change can only occur when all the people of a planet wish for it to occur. Jor-El, one man, tried pleading with the Kryptonian Science Council and the masses to avert their exploitation of the world’s resources, but they would not listen. Even as the most intelligent, or at least the most sagacious, person on the planet, he was unable to change the course of its destiny. Lara may have believed him, but even two voices against billions rarely make a difference. Instead of wishing their son to create a world order where his will is enforced and made to be heeded, they wish for him to create a world where the people grow wise enough to heed reality and overcome the self-destructive circumstances leading to their ultimate downfall. Krypton may have failed in this, but Earth does not have to, not with a Superman there to guide them. But guiding has to be enough, leading by the hand, not by the fist, until human beings become more aware of their perilous activities than Kryptonians ever were.

CHAPTER 3

THE MODERN AND NEW AGES: THE SUPER FIX TO A SUPER PROBLEM

"Show them their possibilities, but never choose their path for them. They must advance on their own, find their own way, make their own mistakes, conquer their fears and hatreds, and create their own history."

Jor-El

(Wolfman, *Superman Returns* Novelization)

After analyzing two methods in which Superman could near instantly solve the Earth's environmental and global crises, the question remains that if Superman has all of this power and energy, then why haven't his writers calculated his capabilities and had the superhero canonically solve the global energy crisis and the rest of the world's issues in the mainstream continuity? DC Comics has never been shy in their other series to these superhuman solutions, so why prevent Superman? In Alan Moore's *Watchmen*, also owned and published by DC, the writer has Doctor Manhattan, a being with the ability to literally create and destroy entire universes, make new technological discoveries for the benefit of his world. He invents vehicles powered purely by lithium electricity, causes huge leaps in a myriad of other scientific fields, and even validates the theory of supersymmetry (Moore, "At Midnight"). Doctor Manhattan is a continual proponent for making his world a better place and is arguably even more powerful than the Man of Steel. So why are climate change and pollution just two of the issues Superman tackles regularly, but never at the root of either issue? His writers have him fix these problems quickly and then leave the character to tackle the same recurring problems in future issues. Unlike Doctor Manhattan who fixes them permanently, Superman leaves the problems to be addressed again later. What could be the reasoning behind this apparent lack of permanent solution with a character who can seemingly do anything?

Even though the Post-Crisis Modern Age continuity does a much more careful and overall better job at portraying Superman as a proponent for the environment instead of its antagonist, the character still prioritizes human lives over the natural world, still averting natural disasters rather than losing innocent human lives to nature's wrath. But this is the first era we are ever actually given a reason for Superman's prioritizing human lives over the environment's well-being—he is waiting for mankind to rise up and protect it themselves. In this continuity, like the others, the most accepted and canonical explanation for Krypton's destruction is the destabilization of the planet's core. However, instead of "dying from old age" or having a uranium bomb for a core, this Krypton exploded due to the consistent and daily mining of the planet's resources for energy (Z. Snyder). Because of this extensive excavation, the planet implodes in upon itself before exploding violently. Superman obviously does not want this to happen to Earth. However, if he fixes everything for the race of mankind, then what will they do when he is gone? They will not be able to sustain what he leaves behind unless they do it for themselves. Human beings as a race seem to be relatively bad at averting slow-changing disasters, but excel in dire emergencies, finding in themselves the capability to produce permanent solutions only when their backs are pressed up against the wall. While it is not ideal that Superman wait for human beings to make the choice to stand up for the planet on their own, it is the most effective way for him to ensure that the solution lasts.

Writers at DC Comics do not want Superman to fix the world's problems overnight. They want human beings to fix them over time—even if neither party knows how exactly they are going to achieve this. Superman is simply to be the guiding moral compass to whatever solution works most effectively. An example of this mentality is shown in the 2010-2011 comic book story arc *Superman: Grounded* written by J. Michael Straczynski and Chris Roberson. Superman

comes into conflict with a chemical plant that has been in production since the 1950's that keeps avoiding environmental safety standards by bribing the inspectors. Its half-century long pollution has had a negative ecological impact on the surrounding area of Des Moines, Iowa, and a disgruntled former employee named Manuel wants Superman to shut the plant down. Upon investigation, Superman does indeed discover the plant's corruption and pollution, but is dissuaded from simply shutting the entire plant down by the employees who still work there, the argument being that thousands will become unemployed. Caught between his dismay with the treatment of the environment and his desire to keep innocent people employed, Superman tells the owners of the plant to "do better" at cleaning up after themselves and that he will personally be checking in for random inspections from now on. This decision garners the dissatisfaction of not only Manuel, but also Superman's wife, Lois Lane, who he tells cannot run the story in the newspaper (11-15). Superman imposes his influence on a human being, albeit one very close to him, to further his own agenda for the race as a whole. By subjugating Lois, he hopes to elevate the rest of mankind. By elevating mankind and spurring them to find solutions on their own, he negates the need for his very existence as Superman.

Superman's refusal to do anything totalitarian, anything the *Injustice* Superman would do, is reflective of his desire for man to make the right decision on their own as well as his compassion for the innocent workers who would not be able to support their families should Superman take control and shut down the plant. However, this decision garners the dissatisfaction and disdain of both Lois and Manuel, who state how disappointed they are in the Man of Steel, someone who is supposed to be unwavering about the laws no matter what the circumstance. Lois' judgment causes Superman to have a "crisis of confidence" as he wonders if all he does is even worth it. If even Lois, his loving wife, is against him on this, then how can he

be sure he is doing what is right anymore? As his most iconic arch-nemesis Lex Luthor has always doubted Superman's influence on humankind, so too does Superman begin to doubt himself, questioning whether or not his presence is truly beneficial for the people of Earth or if it is just a hindrance to their growth. Or worse, just a temporary prolonging to their eventual demise—like Krypton. In this issue, Superman flies off and asks himself what “truth, justice, and the American way” even mean to him anymore if he loses sight of what has always been clear in his life: good and evil, black and white, the opinions of his wife Lois and his arch-nemesis Lex (Straczynski, “Grounded: Part Five”).

Lois Lane and Lex Luthor

Lois Lane first appeared in 1938 in *Action Comics* vol. 1 no. 1 as the leading, career-minded reporter of the Daily Star (later changed to the Daily Planet) who frequently found herself in mortal danger and in constant need of rescuing by Superman. Simultaneous to this, and unbeknownst to her, she began working alongside her savior's alter ego, Clark Kent, ironically finding herself annoyed by him but infatuated with the Man of Steel. Over the course of her career, and after getting to know both characters better, Lois made it her mission to prove that Clark Kent was in fact Superman. And though her machinations always failed due to Superman's interference, she eventually did discover his secret and married him, falling in love with both Clark Kent and his alter-ego. Though their love story originated in the Golden Age, the exact same elements were replicated in both the Silver and Modern Ages, with the two falling in love and eventually marrying. The character of Lois Lane has always been an extremely independent and even sometimes physically capable female role model. Although she frequently finds herself subject to the damsel in distress archetype, Siegel and Shuster originally aimed to elevate Lois

out of the commonality of one-dimensionality that had become so prevalent in female protagonists, an aim that has been consistent amongst every writer of her character for the last seventy-nine years. Her popularity has been enough to make her a mainstay in Superman comics, films, television shows, and cartoons, and she represents to Superman everything that is human and good about his adopted world.

However, unlike Lois who was introduced alongside the first appearance of Superman, the iconic villain Lex Luthor was not introduced until *Action Comics* vol. 1 no. 23 in 1940. And unlike the evil bald businessman he would later become, Luthor was initially introduced as a red-headed diabolical genius bent on provoking war and causing mayhem. Luthor would later be made bald on accident by a studio artist who possibly confused him with another character from the original panels, a mistake that would be made canon in all the subsequent appearances of the character. Over the years, Lex would go through a series of changes and alterations to his original character, becoming (but not limited to): a mad scientist, shrewd businessman, armored supervillain, leader of a group of other supervillains, and even President of the United States (Loeb). Eventually, however, the character of Lex Luthor would settle into a combination of all of the above in the Modern Age of comics, becoming Superman's superior rival in intellect and one of his most feared supervillains.

Together, Superman, Lois Lane, and Lex Luthor make up the three most prominent characters in any title starring the Man of Steel, as all three embody the fundamental character types that most literary genres depend upon: the hero, the love interest, and the villain. However, with that said, each offers their own unique perspective of looking at any standalone Superman comic. Superman's role has been explained at length. He is the embodiment of morality for the people of Earth as well as a hope for them to race behind to save the planet and make it into a

better place to live. However, from an ecocritical perspective, Lois Lane and Lex Luthor offer something different than Superman ever could. As actual humans and not super powered alien beings from another world, they inject more realism into the mythos surrounding the Man of Steel. They make for two very mortal characters who are very easy for the readers to relate to in that one of them loves the godlike being that is Superman and one absolutely despises him. Lois represents the side of mankind that wants a savior to come in and do the heavy lifting for them. Lex represents the side that wants to save themselves. Both characters simultaneously elevate and ground Superman to and from the Earth. Lex aims to fly above the Man of Steel and overcome him. Lois offers to be the safe haven beneath his feet that he can always come home to. Both view him as a godlike being, but only one views him as truly human as well. Their individual perceptions of him are both action oriented, but also divergently incongruent. Lois views him as something to be gathered and kept close. Lex views him as a monster to defeat and rise above.

In her essay “The Carrier Bag Theory of Fiction,” Ursula K. Le Guin describes the differences between hunters and gatherers of the prehistoric eras and how the stories behind picking oats and berries cannot begin to compare to the stories of killing a mammoth (149-50). Written from an ecofeminist perspective, Le Guin describes the very first tools of mankind as being containers of some fashion and that the first stories were not stories of “Action” or “*heroism*,” but instead of “*botulism*,” which in her context means to bottle or to contain. The “carrier bag” is what the gatherers use to bring food and energy back to the males of their group, so that they can perform feats of hunting that would not be possible otherwise. With insight into the amount of energy it must require to hunt a beast as large as a mammoth, Le Guin argues that “before the tool that forces energy outward, we made the tool that brings energy home” (151).

Superman symbolizes both the tool that gathers energy and expels it. To hunt his “mammoth” (his supervillains), he must first contain the energy from the sun within his own body—the carrier bag. Only then can he expel it outward in a demonstration of force. Therefore, Superman is both the hunter and the gatherer. However, Le Guin refers primarily to a gatherer who does not or cannot hunt in the same manner of speaking as the “action hero.” Her version of gatherer hunts in a different way. She adds that, while a pure gatherer’s story may not be full of action and killing, it is a fundamental story nonetheless, as it comes first and provides the very foundation for the more action oriented story to occur (151). In this regard, Lois Lane fits Le Guin’s role as a gatherer in that, as a reporter, she is a gatherer of news. This sometimes dangerous profession puts her life in peril and creates the foundation for Superman to come in and save her, thus creating his action story and perpetuating him as the hero.

If Le Guin has ever read a Superman comic, it is reasonable to say that Lois Lane would probably be her favorite character. “That’s why I like novels: instead of heroes they have people in them” (Le Guin 153). Lois Lane is not what most would define as a hero, because she is instead a person surrounded and saved by them. Like the gatherers in Le Guin’s analogy, Lois Lane has been sucked into the hero’s story, but she was already there long before Superman ever arrived in Metropolis. She was a gatherer of information long before Superman began imposing his heroism on the city. Unlike Le Guin’s analogy, however, it is not usually Superman telling his own story. It is usually Lois reporting on the adventures of Superman, even though they are not her stories to tell; they are Superman’s. Her story involves her becoming the best gatherer she can be—a gatherer of information—so that she can report it and scoop the other men she works alongside, Clark Kent included. However, Lois is also constantly inserting herself as part of the story by running headlong into danger. She is still not the hero in these instances, but when

does what is happening to her stop becoming her story and start becoming Superman's? Lois Lane is a unique fusion character of the Carrier Bag Theory and the "Action" Le Guin describes. Rather than being a pure gatherer in little to no physical danger, Lois makes herself into a gatherer surrounded and threatened with danger. She bridges the gap between Le Guin's polar sides of storytelling, as it is the only way for her to be heavily involved in Superman's life. She is both a gatherer of the home (Daily Planet) and of the hunt (Metropolis), becoming intimately familiar with both Clark Kent and Superman and providing a place of understanding for the Man of Steel to land and hang his cape, which is why Lois' disapproval of him in the *Superman: Grounded* storyline is such a devastating blow. Losing her approval is like losing his humanity, which we find out in later issues he is beginning to question.

However, if Lois is Superman's base, then Lex Luthor aims to be his superior. Superman is Lex's mammoth that Le Guin references that the supervillain must overcome to truly be the "Hero" of his own story. Superman as the mammoth makes sense in this analogy not only because of the obstacle he represents for Lex, stopping him from achieving scientific discoveries that could improve the world and save mankind, but also because Lex views Superman as an actual enemy to mankind itself. In Le Guin's story, the mammoth kills many of the hero's fellow hunters. To Lex, this would be the many plans Superman has thwarted over his belief that Superman being associated with the Earth will ultimately lead to mankind's destruction. Consistently, but most prominently in the Modern Age, Lex has maintained this ideology. In *All-Star Superman* no. 5 "The Gospel According to Lex Luthor," Lex asserts that Superman makes the rest of humanity weak and inferior by comparing themselves to an otherworldly being that quickly and temporarily solves all of their problems for them. It is Lex's belief that an overreliance on Superman will lead mankind to their doom and that an all-powerful alien was

never meant to lead them to salvation (Morrison 8-11). Superman certainly fits the role of Lex's mammoth with his Samsonian strength and limited intelligence, at least next to that of the villainous super genius, but he also fits it because he is undermining Lex's very reason for living. Lex Luthor wants to be mankind's savior and achieve all the glory and fame that comes along with bringing human beings back from the brink of extinction. In this way, Lex's attempts can be read as Le Guin's idea of triumph, which is "Man conquer[ing] earth, space, *aliens*, death, the future, etc." through the use of his technology and modern science, thus becoming and embodying the idea of a "Techno-Hero" of the science fiction genre (153). Superman even asserts that Lex could have accomplished it too, "so much good in the world," had he not become so obsessed with killing Superman (Morrison, "The Gospel According to Lex Luthor" 8). Lex seeing Superman as a threat disables his effectiveness in dealing with the real threat mankind poses to the planet. All of his time and energy is wasted on defeating, demoralizing, or destroying Superman instead of seeking out new methods of energy that could save the world. Arch-nemeses as they are, Superman and Lex Luthor actually have the same goal—elevate human will to the point where they do not need a savior, but can save themselves. But they get in each other's way. Lex's mammoth becomes his own ego and desire to defeat an alien being others see as superior to himself. Superman's mammoth is his resolve to hold back his own incredible power in favor of a more patient and hopeful approach while simultaneously being distracted by Lex Luthor. In their endless battle for victory over one another, neither can ever truly win.

Also, throughout most of Luthor's appearances, he uses natural elements that Superman fights on a regular basis against him. Most prominently, he uses his scientific prowess to create technology that turns nature against Superman, thus forcing him into becoming nature's enemy

once again. If his opponent is an earthquake, then the Earth itself is Superman's adversary. If his opponents are dinosaurs from a time before man, then his triumph over them symbolizes man's dominance over nature's creatures—both current and pre-historic. However, neither are his true enemy in these instances. His true enemy is Luthor, a human using nature as a weapon against other humans. His true enemy seems to be mankind itself. Superman fights humans to save humans with the environment as the victim—always as a casualty to the endless war he wages with his human villains. However, if Lex is correct and Superman's very existence is weakening the resolve of human beings to save the planet they own, then none of Lex's efforts or exploitation of the environment matters anyway. By distracting himself with Superman, he is allowing the world to deteriorate to the point of irreversible degradation while Superman waits for mankind to be "inspired" enough to save themselves. Superman truly is taking a gamble in hoping that mankind will be able to solve the crises they have gotten themselves into. Superman and the "S" on his shield for the House of El is not just a symbol of hope for us. We are a symbol of hope for him. Because if he is not controlling the outcome, then the outcome becomes unknown. And this seems to be the official stance DC writers take as to why Superman does not just fix the world's crises with a simple clap of his hands.

The Future

In the aforementioned *Superman: Grounded* storyline, after gaining disfavor with Lois, his own moral center, Superman loses confidence that what he is doing is right. It is not until he is visited by time travelers who take him into the future that he sees all his message has achieved. The Superman Squad, as they call themselves, are protectors of the entire universe who have all been inspired by Superman to uphold the morals and ideals he put into place during his tenure as

a superhero. Seeing that the future is safeguarded helps to ease his conscience over his decision to continue allowing the plant back in the present day to operate as well as some of the other “gray” decisions he has made lately (Straczynski, “Grounded: Part Six”). This is also not the first time we have seen the future of DC Comics. Based on the Legion of Super-Heroes team from the 31st Century that was originally created by Otto Binder and the *DC One Million* story arcs of the 853rd Century written by Grant Morrison, we see similar futures where human beings have overcome their worldwide crises and achieved peace (save for the occasional supervillain threatening to destroy everything). For Superman to witness these kinds of eventual outcomes makes it easier for him to continue allowing mankind to make their own decisions and mistakes in the hope for a better future.

However, as Lisa Jennings of the Superman Squad points out in Straczynski’s issue above, time is always in a state of flux. Any decision can change and alter it and it still requires Superman to be Superman for it to solidify as an absolute certainty. Therefore, the future is not written in stone and can still be altered. The present still requires a Superman. Also, the way in which human beings achieve world peace and sustainable energy while simultaneously putting an end to crime and corruption is never expostulated upon. We as readers are given the present and the distant future, but rarely ever the in-between, the answer that lies somewhere in the middle telling us as readers how we figured it all out. And if we ever are given a pit stop between the present and far future, it is typically an apocalyptic alternate future or Elseworlds story like *Injustice* or *Red Son* that does not occur in the actual continuity. We are left to wonder how mankind achieves such marvelous wonders without the aid of some super powered being guiding their every action.

Still, even if one possible future is a utopian society that humans have achieved all on their own, if Superman is allowing human beings to continue down their own path and refuses to solve the crises that could eventually destroy the planet, then what does that continue to say about his stance on the environment as a whole? Whereas the Golden and Silver Age versions of the character were relatively unaware and naïve to the severe adversities facing the environment through industrial human development, the Superman of the Modern Age can claim no such naïvety. He knows exactly what humans are doing and allows it to happen anyway. Does that then make him even more of a villainous antagonist to the environment than his counterparts? After all, our constant need for energy in the acquisition and burning of fossil fuels has had such adverse effects on climate change that experts from Oregon State University argue that it has already and will continue to affect the plant life of the world by both killing it and hindering the pollination and spread of certain vegetative species (Bachlett, Drapek, Lenihan, and Neilson 168). Comic book writers have had Superman face climate change in the past as well. During the *Adventures of Superman* vol. 1 no. 620, they had him warm the entire planet using his Heat Vision after a severe climatic shift left the Earth slowly freezing into the next Ice Age (Casey 17). This massive display of power once again only fixed the problem at the time, not the problem as a whole. What is to stop the Earth from experiencing another massive climatic shift? Again, is Superman just delaying the inevitable?

Pollution is another problem Superman simply reacts to and does not act on. The emission of greenhouse gases into the air by automobiles, power plants, and other industrial revolutionizing innovations contributes to the climate change mentioned above, but what about when an oil spill happens? In 2010, BP's dynamically positioned and semi-submersible offshore drilling rig, the Deepwater Horizon, had one of the most catastrophic oil spills to ever hit the

planet, and it has taken more than five years for the spill to be mostly cleaned up. In April 2015, BP settled out of court for \$187 billion in reparation for the environmental disaster (Elliott), but what would Superman have done? In the 1983 film *Superman III*, the Man of Steel faced a similar situation and simply used his Super Breath to blow all of the oil back into the tanker, his Super Strength to close the haul, and his Heat Vision to seal up the tanker's exterior. Ignoring how this would have completely ignited the highly flammable substance, again the conclusion is that Superman fixed in a few seconds what it took BP five years to clean up. To humans, that is success. That is victory. If a mistake is made, but can be almost instantaneously reversed as if it never happened, then where is the subsequent message for change? Why change when there are no long lasting consequences? But Superman only fixes the problem of the moment, not the problem as a whole. What happens when another oil tanker spills? Superman just keeps doing the same thing? In this way, Superman continues being the antagonist toward the environment in his allowing humans to proceed with their ecologically destructive methods of providing themselves with non-renewable energy without any of the concern for the future of the planet or what they are doing to it. Superman always acts as the proverbial get out of jail free card for mankind. Yet, writers use the Man of Steel as a quick fix for environmental calamity anyway, missing the fact that, by doing so, they are further making him nature's enemy and not its savior.

When Superman refuses to put an end to a polluting chemical plant because it will put thousands out of work, he is placing a human community above nature. When Superman temporarily fixes climate change or stops an oil spill, but allows humans to continue burning fossil fuels, he is putting mankind above the environment. Unfortunately for the longstanding superhero, he is caught between the proverbial "rock and a hard place" metaphor. He cannot save mankind or nature in an instant without becoming the overreliance for human beings that Lex

Luthor fears most, and he cannot simply allow environmental catastrophes to happen without also allowing avoidable deaths to human beings. The former halts mankind's growth while the latter makes Superman into a malevolent god-like being who allows the people he is charged to protect suffer. Neither is a winning scenario, and so writers have made him into a character who has created his own unique compromise right in the middle. But compromising the fate of the entire planet for human betterment is a colossal risk. If Superman allows mankind to make its own mistakes and we make too many, then does not Superman fail in his mission to "make a better world"? He is leaving a lot to chance. Writers have already had him fix our mistakes in the past by removing all nuclear devices from the planet and single-handedly putting an end to World War II. What is the real difference between solving those crises and solving the environmental ones? Other than the fact that having Superman solve problems like a soldier seems to sell a lot more comics than having him solve them like a Duracell.

Realistically speaking, explaining how Superman could solve the global energy crisis and plugging him up to a strong enough thermonuclear reactive power source would take one issue maximum to explain, and it probably would not sell as many issues as having Superman fight against villains like General Zod and Darkseid. Comic books are still a business and they seek to put out what sells. And what sells is Superman fighting someone who can explode stars with his mind, not so much Superman finding a way to contain the exorbitant levels of CO₂ in the atmosphere and punishing those responsible for tearing down rainforests. Going back to Le Guin's explanation, the story of the action hero typically seems to be more interesting to the audience than the story of the gatherer. In the *Superman Red/Superman Blue* run of DC Comics, Superman literally becomes living and personified energy. Having Superman become a being of pure electricity happened toward the end of the 90's when ecocriticism was at the height of its

popularity. The storyline lasted less than a year before the series saw Superman returning to his original form.

CONCLUSION: THE SUPERMAN WE NEED

"Dreams save us. Dreams lift us up and transform us. And on my soul, I swear... until my dream of a world where dignity, honor, and justice becomes the reality we all share... I'll never stop fighting. Ever."

--Superman

(Joe Kelly, "What's So Funny about Truth, Justice, and the American Way?")

In 1996, Mark Waid and Alex Ross wrote *Kingdom Come*. Published under the *Elseworlds* storyline brand and taking place on yet another parallel Earth in DC's multiverse (Earth-22), the story was similar to the *Injustice* world. The story posed the question of whether or not Superman should step in to solve everything for mankind or if he should completely leave them to their own fate. Unlike the *Injustice* storyline, he chooses the latter, at least for a time. After losing Lois Lane and most of the Daily Planet's staff to a Joker attack, a new villain named Magog kills the Joker and receives public praise for his taking the role of judge, jury, and executioner. This act of violence appalls Superman, who is already disheartened by the death of his love. He retires and isolates himself to a secluded life in the Fortress of Solitude for the next ten years. During this time, Magog effectively takes over the world and begins transforming normal citizens into metahumans, increasing the superhuman population dramatically. Eventually, Superman emerges, re-forms most of the Justice League, and stops Magog, but not before Batman gives him a speech about how his interference will simply lead to the world having to deal with further issues yet again. During their conversation, Batman explains to Superman that tensions have been building to a head for years under Magog's rule and that "Once ordinary folks decided [he] and [Superman] were too gentle and old-fashioned to face the challenges of the 21st Century. They wanted their heroes stronger and more ruthless." They wanted them to act aggressively and decisively rather than patiently and passively (Waid). Ironically, it is Batman who becomes the totalitarian, running Gotham like a city-state in the

hopes of methodically regaining control of the country. However, it is still Superman's interference that brings about the end of Magog's rule, albeit at the cost of many metahuman citizens' lives. The entire *Kingdom Come* storyline ends with a bittersweet conclusion that leaves its readers asking whether we truly want a Superman to save us or whether we want to save ourselves.

In the foreword to the *Kingdom Come* collection, comic book author Elliott S. Maggin wrote that the superhero of today's world is the Everyman and that humans have transcended beyond their former selves so far that the past to the present is like comparing mortals to gods. He mentions our ability to travel the world in hours, speak with anyone anywhere on the planet in seconds, and even bend environmental forces to our will for our benefit. If any human being from hundreds of years ago gazed upon the way we live now, they might actually think everyone in the future is superhuman. What Maggin is referring to is simple human advancement, but as we look to the skies for a superhuman savior, we fail to realize that the savior is just time. We inherently want a single person to come along and fix everything in an instant. This desire for a solution is why America has largely voted for the "change" slogan in the last three presidential campaigns. When someone promises things will change, we as human beings have a tendency to get behind the idea and support the person making such promises, regardless of any evidence that their promises will come to fruition. However, Maggin goes on to say that the story of *Kingdom Come* is about human self-realization and that, as humans, "We have an obligation to know who we are and where we are and what we can do. We have an obligation to understand the ramifications of the things we do, and to choose to do them—or not—with our eyes open" (Maggin, "The New Bards"). The "we" in his statement is inclusive of all humans, not just one

person. We may want a single being to swoop in and save us, but the reality of how history has operated is that it has been a collective human effort, not the machinations of one human being.

In the same introduction, Maggin references his 1972 issue of *Superman* vol. 1 no. 247 “Why Must There Be a Superman?” The story consists of the Guardian of the Universe (from the Green Lantern stories) planting a new idea in Superman’s head. What if “in his zeal to preserve life and ease the path of the human race, Superman was keeping ordinary everyday good humans from growing on their own?” Perhaps he was killing the butterfly by helping it out of its chrysalis before it had the chance to fully mature (Maggin, “The New Bards” 6). The story ends with Superman deciding to save a group of agricultural workers up to a certain point, but then insist that they help themselves from there on out. The faith Superman places in man overtakes his desire to protect the environment and hearkens back to the question of Superman being good for the planet or bad for it. Is he good for its people or just acting as an enabler for their weakness?

But what if we did have a Superman who single-handedly solved all of the Earth’s environmental crises? What if we had a solar powered being who solved the global energy crisis by becoming literal energy? Of course, this is possible in the fictional universe of DC Comics, but is it possible in the real world? The United States, the European Union, China, India, Japan, Korea, and Russia seem to think so. In Southern France, thirty-five nations have begun construction on “one of the most ambitious energy projects in the world today” (ITER). They call it ITER, which in Latin means “the way” and stands for International Thermonuclear Experimental Reactor. Basically, what this machine will be designed to do is literally create solar energy here on Earth. All other plants use fossil fuels, nuclear fission, or renewable resources like wind and water to generate electricity. However, ITER uses a tokamak machine that

harnesses the power generated from nuclear fusion, which is what happens inside the Sun. Only to compensate for their inability to imitate the Sun's gravity, they are turning up the heat from 15 million degrees Celsius (the temperature at the Sun's core) to 150 million degrees Celsius. Unlike any other machine before it, the ITER will be the first power plant that requires less energy to power than it outputs. Scientists estimate that it will deliver ten times the energy it requires to run it and produce 500 megawatts (500 million Joules per second) of clean fusion energy. Obviously a far cry from Superman's 603 quintillion Joules per second, but scientists argue that this is only the first step and that a larger plant burning hotter could theoretically produce much more energy. Construction of the plant has already begun, but projected dates for completion are currently unknown (*ITER*). Interestingly enough, though, it seems that scientists of the real world have inadvertently copied Superman from the comic books in the hopes of transforming him into a power plant. Instead of the Sun being trapped inside the body of a man, they intend to create a new sun on Earth.

One of the most fundamental elements of fiction is that it consistently inspires real world technologies and innovations. The submarine was inspired by Jules Verne's 1870 novel *Twenty Thousand Leagues Under the Sea*. H.G. Wells predicted the use of atomic power in his 1914 novel *The World Set Free*. Even Martin Cooper, director of research at Motorola, credits Dick Tracy's wrist radio and *Star Trek*'s personal communicator for creation of the cell phone in the 1970's. With numerous other examples—from the taser to the helicopter—saturating science fiction and being fulfilled in scientific reality, it is evident that the genre is responsible for some of our greatest scientific advancements over the last century. Now, Superman is obviously a fictional character in a fictional world, but that is exactly the point of analyzing his power, goals, and objectives. If someone with far more scientific expertise than myself can examine the

character and realize a new method of harnessing solar energy that completely eclipses all of its predecessors, then the analysis of Superman's perfect absorption and release of solar energy moves closer to fact than fiction, a prospect that seems to be moving closer to reality.

Even if the seemingly faraway ITER never comes to fruition, there have still been many advancements in the field of solar energy in just the year 2016 alone. Harvard scientists Daniel Nocera and Pamela Silvers developed a "bionic leaf" that can capture and convert ten percent of the energy in sunlight in a sort of artificial photosynthesis that is approximately ten times more effective than natural photosynthesis (Reuell). Another team of MIT researchers, using a new combination of carbon nanotubes and nanophotonic crystals, developed a new solar cell that captures almost the entire spectrum of sunlight rather than just the red to violet portion. By pushing into the infrared and ultraviolet degrees of the electromagnetic spectrum, the solar "thermophotovoltaics" capture and convert light into far more heat energy than traditional solar panels (Chandler). These, along with other solar cell innovations and further advancements in converting carbon dioxide into energy fuel cells and usable ethanol, have created a rapid push toward renewable energy as the next answer to saving the environment. Although none of these revolutionary advances may be the key to solving the root problem, the answer probably lies somewhere in-between or through incorporating aspects of all of them combined. Humans keep persisting to find the solution, but the solution is rarely ever found through one human alone. Like anything, it is a process. Someone invents a solar panel. Someone improves upon the solar panel. Someone makes it cheaper. Someone improves upon it again, makes it even cheaper again. Until eventually, the solar panel is more effective (both economically and energetically) than any of its competitors that it replaces all other forms of energy consumption. And it was not one person who did it. It was a collective effort.

As with all great characters, Superman stands for something much larger than himself. Yes, “hope” is his shield and his symbol, but he is not just a character for humans to aspire to be more like. He is a reminder that we do, in fact, need someone or something much larger than ourselves to save us. In *Superman on the Couch: What Superheroes Really Tell Us about Ourselves and Our Society*, Danny Fingeroth says that someone “must always intervene in the domestic and global squabbles that comprise human existence. We can’t do it on our own” (156). Essentially, that is why we as humans look so eagerly to superheroes to save us and comic books to take us away from our real world issues. While Fingeroth is correct in that no one person can save mankind on their own, I would perhaps change the word “save” to “inspire.” Humans have a great deal of potential within to fix crises when they arise, but it always takes something larger than the individual to think of the solution, as well as a reason greater than simple self-preservation. DC Comics has Superman nailed when they have Lex Luthor state that he does not need to act as a savior to mankind, since that will make human beings over-reliant and over-dependent on him every time a new crisis arises. So what if he fixes the global energy crisis and negates our need for fossil fuels? What happens after Superman ages from the world and dies and another new crisis takes its place? Without a Superman, what else do we do but resort to our old ways and begin using and abusing the Earth again. Superman is not a savior. Yes, he is acting against the Earth in favor of mankind, allowing pollution and environmental destruction to occur for the sake of saving lives and livelihoods, but only for a time. He is being cruel to be kind, hoping that, in the long run, human beings grow, as they always have in the past, and change their ways before it is too late. And to give comic book writers their due, I believe they realized this and began writing Superman to fit that moralistic and hopeful attitude. Why else would they have Lex Luthor of all people bring attention to such a fact, especially to Superman?

Who knew that I would ever be agreeing with Lex Luthor? My ten-year old self would be so disappointed in me.

As much as we want him to be, a Superman is not the answer to the world's environmental and ecological crises. The Everyman is. At times, we as human beings feel passive and helpless to do anything, especially with everything going on in our lives. We assume the real world is changing without our doing anything. *Fandor* sponsors a video called "Superhero Bystanders" in which the creator compiled scenes from a majority of famous superhero movies where, while the superhero is flying around or saving the day, the common citizens just watch passively from a distance, rarely interfering (Frezza). The videographer makes the assertion that the audience watching the movie are the passive onlookers within the film itself and then poses the question as to what would happen if the onlookers became involved in the superhero's activity. As *Kingdom Come* and Elliott S. Maggin point out, we are our own superheroes. But only working together can we truly accomplish anything magnificent. This call to action is a call to avoid the passivity and helplessness that plagues ecocritical concerns. So long as we think we do not have the ability to create change, there will never be any. So long as we are waiting on a Superman to come change everything for us, nothing substantial will ever alter the predetermination of our self-fulfilling prophecies. True improvement of the environmental and energy crises the world is currently facing will never occur because of one person, one inventor, one president, or one Superman. True change will only ever happen because of every person, every inventor, every leader, and the Everyman.

REFERENCES

- Bachlett, Dominique, Raymond J. Drapek, James M. Lenihan, Ronald P. Neilson. "Climate Change Effects on Vegetation Distribution and Carbon Budget in the United States." *Ecosystems*, vol. 4, no. 3, 2001, pp. 164-185.
- Bates, Cary. "A New Life for the Orphan from Krypton." *Superboy*, vol. 2, no. 15. DC Comics, 1981.
- Bernstein, Robert. "The Cry-Baby of Metropolis." *Superman's Girlfriend, Lois Lane*, vol. 1, no. 10. DC Comics, 1959.
- . "When Superman Lost His Powers!" *Superman*, vol. 1, no. 262. DC Comics, 1960.
- Bible, The*. New International Version, Exodus 1-15, Zondervan, 2002.
- Binder, Otto. "The Legion of Super-Heroes." *Adventure Comics*, vol. 1, no. 247. DC Comics, 1958.
- Binder, Otto, Ray Burnley, Curt Swan, and Mort Weisinger. *Superman's Pal, Jimmy Olsen*, vol. 1. DC Comics, 1954-74.
- Bradshaw, Corey J.A. and Brook, Barry W. "Key Role for Nuclear Energy in Global Biodiversity Conservation." *Conservation Biology*, vol. 29, no. 3, 2015, pp. 702-712.
- Bridwell, E. Nelson and Edmond Hamilton. "The 1,000th Exploit of Superman and Batman!" *World's Finest*, vol. 1, no. 155. DC Comics, 1966.
- Byrne, John. *Man of Steel*, vol. 1. DC Comics, 1986.
- Campbell, Joseph. *The Hero with a Thousand Faces*. 3rd ed., New World Library, 2008.
- Casey, Joe. "Supernova." *The Adventures of Superman*, vol. 1, no. 620. DC Comics, 2003.
- Chandler, David L. "Hot New Solar Cell." *MIT News*, 23 May 2016, <http://news.mit.edu/2016/hot-new-solar-cell-0523>. Accessed 8 Apr. 2016.

- Cooper, Martin. *Scene World*. 12 Feb. 2015, <http://sceneworld.org/blog/2015/02/12/video-interview-with-marty-cooper>. Accessed 15 Apr. 2017.
- Deutsch, David. *The Beginning of Infinity*. Viking Press, 2011.
- DiStasio, Thomas J. "Validation of the Brzycki and Epley Equations for the 1 Repetition Maximum Back Squat Test in Division I College Football Players." MA thesis, Southern Illinois University Carbondale, 2014.
- Duncan, Randy. San Diego Comic-Con International, 20-23 July 2006, San Diego Convention Center, San Diego, CA. Guest Lecture.
- Elliot, Debbie. "5 Years After BP Oil Spill, Effects Linger and Recovery is Slow." *NPR*. 20 Apr. 2015. www.npr.org/2015/04/20/400374744/5-years-after-bp-oil-spill-effects-linger-and-recovery-is-slow. Accessed 10 Nov. 2015.
- Fingeroth, Danny. *Superman on the Couch: What Superheroes Really Tell Us About Ourselves and Our Society*. Bloomsbury Academic, 2004.
- Fleischer, Max and Dave Fleischer. *Superman*. Fleischer Studios, 1941-42.
- . *Electric Earthquake*. Fleischer Studios, 1942.
- . *Terror on the Midway*. Fleischer Studios, 1942.
- . *The Arctic Giant*. Fleischer Studios, 1941.
- . *The Magnetic Telescope*. Fleischer Studios, 1942.
- . *The Mechanical Monsters*. Fleischer Studios, 1942.
- Frezza, LJ. "Superhero Bystanders." *Fandor*, 3 Nov. 2016, www.fandor.com/keyframe/watch-superhero-bystanders. Accessed 1 Apr. 2017.
- Furie, Sidney J, dir. *Superman IV: The Quest for Peace*. Perf. Christopher Reeve, Margot Kidder, Gene Hackman. Warner Bros, 1987.

- Gabilliet, Jean-Paul. *Of Comics and Men: A Cultural History of American Comic Books*. UP of Mississippi, 2009.
- Garratt-Smithson, L., A.W. Muir, J.J. Watson, and M. Sczykulska. "The Solar Efficiency of Superman." *Journal of Physics Special Topics*, vol. 12, no. 1, 2013, pp. 1-2.
- Glotfelty, Cheryll. Introduction. *The Ecocriticism Reader*, by Glotfelty and Harold Fromm, U of Georgia P, 1996, pp. xv-xxxvii
- Heumann, Joseph K. and Murray, Robin L. *That's All Folks?: Ecocritical Readings of American Animated Features*. U of Nebraska P, 2011.
- Hickman, Jonathan. *Secret Wars*, vol. 1. Marvel Comics, 2015-16.
- Johns, Geoff. *Flashpoint*, vol. 2. DC Comics, 2011.
- . *Infinite Crisis*, vol. 1. DC Comics, 2005-06.
- . *Superman: Secret Origin*, vol. 1. DC Comics, 2009-10.
- . "The Men of Tomorrow." *Superman*, vol. 3, no. 38. DC Comics, 2015.
- . "The New 52!" *DC Comics: The New 52*, vol. 1, no. 1. DC Comics, 2011.
- Jurgens, Dan. "Doomsday!" *Superman*, vol. 2, no. 75. DC Comics, 1992.
- . "Superman Reborn: Part 4." *Action Comics*, vol. 1, no. 976. DC Comics, 2017.
- . *Superman Red/Superman Blue*, vol. 1, no. 1. DC Comics, 1998.
- Jurgens, Dan, Jeff King, Scott Lobdell, Carlo Pagulayan, and Ethan Van Sciver. *Convergence*, vol. 1. DC Comics, 2015.
- Kanigher, Robert. "Mystery of the Human Thunderbolt!" *Showcase*, vol. 1, no. 4. DC Comics, 1956.
- Kelly, Joe. "Trial by Fire." *Action Comics*, vol. 1, no. 782. DC Comics, 2001.

- . "What's So Funny About Truth, Justice, & the American Way?" *Action Comics*, vol. 1, no. 775. DC Comics, 2001.
- Kirby, Jack. "Meet Captain America." *Captain America Comics*, vol. 1, no. 1. Timely Publications, 1940.
- Klein, Norman M. *Seven Minutes: The Life and Death of the American Animated Cartoon*. Verso, 1993.
- Le Guin, Ursula K. "The Carrier Bag Theory of Fiction." *Glotfelty and Fromm*, pp. 149-154.
- Lee, Stan. "Iron Man is Born!" *Tales of Suspense*, vol. 1, no. 39. Marvel Comics, 1963.
- . "The Fantastic Four." *Fantastic Four*, vol. 1, no. 1. Marvel Comics, 1961.
- Leeming, David Adams. *Mythology: The Voyage of the Hero*. 3rd ed., Oxford UP, 1998.
- Lester, Richard, dir. *Superman III*. Perf. Christopher Reeve, Margot Kidder, Richard Pryor, Annette O'Toole. Warner Bros, 1983.
- Lobdell, Scott. "H'El on Earth, Prelude: They Will Join You in the Sun." *Superman*, vol. 3, no. 13. DC Comics, 2012.
- Loeb, Jeph. "Lex Luthor: Triumph Over Tragedy." *Superman: Lex 2000*, vol. 1, no. 1. DC Comics, 2001.
- Love, Glen A. "Revaluing Nature." *Glotfelty and Fromm*, pp. 225-240.
- Lupoff, Richard A. "Re-Birth." *Comic Art*, 20 Apr. 1961, pp. 2-8.
- Maggin, Elliot S. "The New Bards: An Introduction by Elliot S. Maggin." *Kingdom Come*, vol. 1. DC Comics, 1996.
- . "Why Must There Be a Superman?" *Superman*, vol. 1, no. 247. DC Comics, 1972.
- Maxwell, Robert J. *Adventures of Superman*. Warner Bros, 1952.

- “Meteor from Krypton, The.” *The Adventures of Superman*. Mutual Broadcasting System, WOR, New York City, 7 Jun. 1943.
- Millar, Mark. *Superman: Red Son*. DC Comics, 2003.
- Miller, Frank. “The Dark Knight Falls.” *Batman: The Dark Knight Returns*, vol. 1, no. 4. DC Comics, 1986.
- Moore, Alan. “At Midnight, All the Agents.” *Watchmen*, vol. 1, no. 1. DC Comics, 1986.
- . “The Jungle Line.” *DC Comics Presents*, vol. 1, no. 85. DC Comics, 1985.
- Morrison, Grant. *All-Star Superman*. DC Comics, 2005-08.
- . “It Begins Again.” *Action Comics*, vol. 2, no. 5. DC Comics, 2012.
- . “Death Star.” *DC One Million*, vol. 1, no. 4. DC Comics, 1998.
- . “The Gospel According to Lex Luthor.” *All-Star Superman*. DC Comics, 2006.
- . “World War III – Part Six: Mageddon.” *JLA*, vol. 1, no. 41. DC Comics, 2000.
- Nyberg, Amy Kiste. “Comics Code History: The Seal of Approval.” *Comic Book Legal Defense Fund*, www.cbldf.org/comics-code-history-the-seal-of-approval. Accessed 15 Mar. 2017.
- Plato, Grube, G. M. A., & Reeve. *Republic*. Hackett Pub. Co., 1992.
- Popper, Karl. *The Poverty of Historicism*. Routledge, 2002.
- Reuell, Peter. “Bionic Leaf Turns Sunlight into Liquid Fuel.” *Harvard Gazette*, 2 Jun. 2016, <http://news.harvard.edu/gazette/story/2016/06/bionic-leaf-turns-sunlight-into-liquid-fuel/>. Accessed 8 Apr. 2016.
- Roberson, Chris and J. Michael Straczynski. “Superman: Grounded.” *Superman*, vol. 2, no. 707. DC Comics, 2010.
- Samachson, Joe. “The Origin of Superboy.” *More Fun Comics*, vol. 1, no. 101. DC Comics, 1945.

- Schiff, Jack. "Superman Says... Be A Good Citizen." DC Comics, 1962.
- Siegel, Jerry. "The World of Mr. Mxyzptlk." *Action Comics*, vol. 1, no. 273. DC Comics, 1961.
- Siegel, Jerry and Joe Shuster. "The Man Who Sold Superman." *Action Comics*, vol. 1, no. 6. DC Comics, 1938.
- . "The Black Gold Oil Well." *Action Comics*, vol. 1, no. 11. DC Comics, 1939.
- . "Man or Superman?" *Superman*, vol. 1, no. 17. DC Comics, 1942.
- . "How Superman Would End The War." Comic Strip. *Look Magazine*, 1940.
- . "Superman Battles Death Underground." *Action Comics*, vol. 1, no. 3. DC Comics, 1938.
- . "Superman, Champion of the Oppressed." *Action Comics*, vol. 1, no. 1. DC Comics, 1938.
- . "Superman, Europe at War Part II." *Action Comics*, vol. 1, no. 23. DC Comics, 1940.
- . "Superman: The Big Scoop." *Action Comics*, vol. 1, no. 5. DC Comics, 1938.
- . "The K-Metal from Krypton." N.p., 1940.
- Snider, Brandon T. *DC Comics Ultimate Character Guide*. DK Children, 2011.
- Snyder, Scott. "The Fall." *Superman Unchained*, vol. 1, no. 2. DC Comics, 2013.
- Snyder, Zack, dir. *Man of Steel*. Perf. Henry Cavill, Michael Shannon, Ayelet Zurer. Warner Bros, 2013.
- Straczynski, J. Michael. "Grounded: Part Five." *Superman*, vol. 1, no. 707. DC Comics, 2011.
- . "Grounded: Part Six." *Superman*, vol. 1, no. 708. DC Comics, 2011.
- Taylor, Tom. *Injustice: Gods Among Us Year 1*, vol. 2. DC Comics, 2014.
- . *Injustice: Gods Among Us Year 2*, vol. 1. DC Comics, 2014.
- . *Injustice: Gods Among Us Year 3*, vol. 1. DC Comics, 2015.

Tang, Tianjia, Bob O'Loughlin, Mike Roberts, and Edward Dancausse. *An Overview of Federal Air Quality Legislation As Related to Federally-Assisted Highway and Transit Programs*. Federal Highway Administration, 2012.

Turner, Frederick. "Cultivating the American Garden." Glotfelty and Fromm, pp. 40-51.

United States, Congress, Senate, House. *Limitation of Liability Act of 1851*. Government Printing Office, 1851. 32nd Congress, 1st session.

---. *Oil Pollution Act of 1924*. Government Printing Office, 1924. 68th Congress, 1st session. Senate Report 68-238.

Verne, Jules. *Twenty Thousands Leagues Under the Sea*. Pierre-Jules Hetzel, 1870.

Waid, Mark. *Superman: Birthright*, vol. 1. DC Comics, 2003-04.

Waid, Mark and Alex Ross. *Kingdom Come*. DC Comics, 1996.

Wein, Len. "Pollution Parable." *The Amazing World of DC Comics Special*, vol. 1, no. 1. DC Comics, 1976.

Wells, H.G. *The World Set Free: A Story of Mankind*. Macmillan Publishers, 1914.

Wertham, Frederic. *Seduction of the Innocent*. Rinehart, 1954.

"What is ITER?" *ITER*. ITER International Fusion Energy Organization. n.d. <https://www.iter.org/>. Accessed 11 Nov. 2015.

Wolfman, Marv. *Crisis on Infinite Earths*, vol. 1, no. 1-12. DC Comics, 1985-86.

---. *Superman Returns*. Warner Books, 2006.

Woolfolk, William. "The Prankster's Radio Program!" *Superman*, vol. 1, no. 61. DC Comics, 1949.

Yan, Lingyu. "Analysis of the International Oil Price Fluctuations and Its Influencing Factors." *American Journal of Industrial and Business Management*, vol. 2, no. 1, 2012, pp. 39-46.

**APPENDIX A:
OFFICE OF RESEARCH INTEGRITY APPROVAL LETTER**



Office of Research Integrity

February 13, 2017

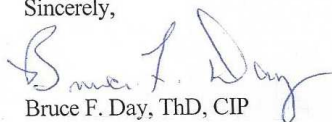
Justin Crary
629 Evergreen Circle
Poca, WV 25159

Dear Mr. Crary:

This letter is in response to the submitted thesis abstract entitled "*Planet Superman: An Eco-critical Analysis of the Man of Steel from 1938-2017.*" After assessing the abstract it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the information in this study does not involve human subjects as defined in the above referenced instruction it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and a determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,



Bruce F. Day, ThD, CIP
Director

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