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Exposition and Argument

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The Three C Savior of the Future: Combating Climate Change

Introduction

For millennia, the advancement of humankind has been governed by an innate greed to prosper and accumulate wealth. While a desire for riches is not harmful in itself, the actions that are inspired out of that motivation can be vastly detrimental to the planet Earth. For instance, overhunting and a taste for exotic creatures led to the dodo bird's extinction in 1681, well over three centuries ago. In recent times, species of the elephant and rhinoceros have been pushed to the point of near-extinction because of ivory-hungry poachers and equivalently enthusiastic buyers. All in all, humans have elaborately expressed their interest in exploiting the resources presented to them, and their latest target of value is fossil fuels. For nearly two centuries, the world has been drilling, mining, and combusting fossil fuels to meet a growing demand of its services, propelled by a world that is seeing increased use of these materials every year. The expansion of fossil fuel usage comes with the dominance of the fossil fuel industry, a major proponent of the world's economy with over a trillion dollars in revenue coming from just three of the hundreds of companies involved. With so much money involved in these massive operations, the vast environmental impact of producing and using fossil fuels was overlooked for decades, so that corporations could continue to make hundreds of billions and the economy would continue to prosper. However, after centuries of human exploitation of natural resources, the time has come to stop looking the other way, and instead start taking actions that value Earth

and respect what is left. Revenue and profits could matter less if the planet is deemed unlivable due to complications from global warming, among which include rising sea-levels and increasing air pollution in major cities, and unpredictable freak weather happenings of tremendous destruction. According to Bill McKibben in "Global Warming's Terrifying New Math," humans only have until 2050 to take action to combat climate change, before its effects become irreversible. Before that time arrives, people have to stow away their greed for money, and take the first step of acknowledging that climate change is real and that its effects are caused by human actions. The massive corporations that dominate the fossil fuel industry are never going to publicly come to that conclusion, no matter how obvious the statement becomes. That task is for the people, the citizens of America, and the rest of the countries in the world, to not only campaign for action to be taken at the governmental level, as suggested by Siri Gloppen and Asuncion Lera St. Clair in "Climate Change Lawfare," but make the small changes in their respective lives to make a difference on the international scale in combating global warming. It is time that the world collectively realizes that climate change is manmade, and because of that fact, the issue has to be taken seriously so that immediate action can be pursued in order to combat its effects.

The Origins of Global Warming

In the near two centuries since the commencement of the Industrial Revolution, the burning of fossil fuels has cemented itself as a key component to everyday practices. However, life was very different prior to those consequential breakthroughs in the 18th century, with scholars even agreeing that the planet may have been under a phenomenon known as global cooling. The vast conquests made by European explorers wiped out millions of indigenous peoples in the Americas from war and disease, with 55 million people, or ninety percent of the native

population perishing (Chokshi 1). After this tremendous expulsion of life from North America, "the earth then reclaimed the land that these populations left behind. New vegetation pulled heat-trapping carbon dioxide from the atmosphere and into the land, contributing to what scientists refer to as the "Little Ice Age'" (1). Imagine causing so much destruction of life that global temperatures were lowered from the resulting effect. The Earth made use of the explorers' exploits, with "new vegetation pulling heat-trapping carbon dioxide from the atmosphere and into the land," a process which then cooled the planet. This cooling did not last for long, however, as the start of the Industrial Revolution entirely reversed its effect. Since the commencement of industry, global temperatures have risen by over one degree Celsius, and humans are on track to double the pre-Industrial global temperature by 2035.

By the late 1980s, scientists were developing models tracking the rise of carbon dioxide in the atmosphere, and the progress of global warming. One scientist, Gordon MacDonald, a prominent geophysicist of the time, predicted that by 2035, "Global temperatures would increase by an average of two to three degrees Celsius; Dust Bowl conditions would 'threaten large areas of North America, Asia and Africa'; access to drinking water and agricultural production would fall, triggering mass migration on an unprecedented scale" (Rich 11). These ominous warnings portray a world very different from pre-Industrial times, making clear that the Industrial Revolution was essentially a catalyst for the present issue of global warming. Even as late as the 1980s, people vastly underestimated the future consequences of global warming, and most dismissed MacDonald's predictions of "Dust Bowl conditions [and] mass migration on an unprecedented scale" as fear-mongering. While the effects of global warming have become increasingly evident in recent times, the planet has seen warming before. Millions of years ago, "there were crocodiles, palm trees, and sand tiger sharks in the Arctic Circle, [and] waters that

today would surround Antarctica, sea-surface temperatures might have topped an unthinkable 86 degrees Fahrenheit" (Brannen 2). However, while Antarctica may have seen temperatures of "an unthinkable 86 degrees Fahrenheit" in the past, times are different now with significant changes to the tectonics and biology of Earth. The heat waves of today have started "to take on an unearthly quality," but are still dismissed as being the norm (3). Perhaps there would be no global warming today if scientists and governments had taken reactionary steps in the late 20th century. However, "had a scientist in the early 1990s suggested that within 25 years a single heat wave would measurably raise sea levels, bake the Arctic and produce Sahara-like temperatures in Berlin, the prediction would have been dismissed as alarmist" (Linden 1). People could not help but question the seriousness of the threat that global warming posed to the planet; even scientists could not wrap their heads around the haunting predictions that were in place for the future. It seemed too unlikely that "a single heat wave would measurably raise sea levels and bake the Arctic," and that hunch has led to the expensive consequences of today, from the 4 billion dollars in fire damage in California to the 125-billion-dollar lesson in flooding caused by Hurricane Harvey in Texas. With these freak weather incidents to serve as evidence of climate change and the overall rising of temperatures and sea levels, it appears that scientists and experts are finally catching up with the reality of climate change. However, whether politicians can jump on board has yet to be seen.

Global Warming in the 21st Century

Global warming was not spawned overnight, but was an issue more than a century in the making; recently, this issue has been fueled by the increasing wastefulness and sheer inconsideration for conservation seen with the advent of the 21st century. Fossil fuels are all around, responsible for moving vehicles and powering homes and businesses, serving as a reliable source of energy for

all times and purposes. Unfortunately, despite the ubiquity of fossil fuels, their relative inexpensiveness at the moment, and their wide outreach of purpose, they are vastly detrimental to the planet, contributing significant amounts of carbon dioxide into the atmosphere at dangerous levels. To put these negative effects into perspective, “a third of summer sea ice in the Arctic is gone, the oceans are 30 percent more acidic, and since warm air holds more water vapor than cold, the atmosphere over the oceans is a shocking five percent wetter**,** loading the dice for devastating floods” (McKibben 2). In the short term, the effects of global warming on daily life will primarily be seen in weather patterns. However, the nature of those weather changes can range anywhere from having a warm day in the winter, to having freak incidents from unusually powerful hurricanes to record flooding. While these effects in themselves are more than capable of wreaking havoc on humans living in weather disaster-prone areas, allowing them to expand further means humans might as well be “loading the dice” for the effects to become the permanent face of the Earth, a grim future that looms over this battle against global warming. Focusing on the numerical data surrounding this issue of climate change can especially help make clear the impending irreversible damage to the planet if action is not taken soon. As of now, global temperatures have been increased by around 0.8 degrees Celsius, a number which does not convey the full weight of its implications (4). The effects seen today, including the vast disappearance of sea ice and the increased acidity of the oceans, both of which are in themselves significant cause for concern, have resulted from this seemingly trivial 0.8 degree increase in global temperatures. Despite the detriments seen already, the planet can be pushed further, up to a maximum rise of temperature of 2.0 degrees Celsius, a number agreed upon by a general consensus of world leaders at the Copenhagen Climate Conference in 2009. In fact, even at that summit, “NASA scientist James Hansen, the planet’s most prominent climatologist, is even

blunter: 'The target that has been talked about in international negotiations for two degrees of warming is actually a prescription for long-term disaster'" (3). Even 2.0 degrees would be vastly detrimental to the future of this planet, "a prescription" for freak weather incidents and rising sea levels, but one can argue that at least the consensus was agreed upon to limit carbon dioxide output and combat climate change. However, that meeting was over ten years ago. In the last decade, global temperatures have continued to rise, with 2018 being the fourth year in a row to set the record for warmest recorded year yet, being 0.79 degrees Celsius above the 20th century average. Unfortunately, the sense of urgency among the scientific community with regards to dealing with global warming "arrives more than 30 years after human-caused climate change became a mainstream issue" (Linden 2). If climate change had been taken seriously from the start, "more than 30 years" ago, perhaps significant progress could have been made by now to restrict its adverse effects on the planet. However, the reality is that not only have countries failed to live up to the expectations they set in 2009, but their politicians continue to be driven by the economic prosperity associated with the renewed use of fossil fuels. The time has come for change.

Change is very Achievable

Despite the grim forecasts and rapid decimation that the planet has faced, human actions are still more than capable of inspiring reform in the battle against climate change. That sense of hope is critical to the combating of global warming, as only truly believing that each and every persons' actions matter can have any effect on a worldwide scale in seeing positive change. Having hope is the key to taking action, as "regardless of how much we care and how much we know, we rarely act on our commitments if we do not believe that we can affect the outcome. Hope is what makes effective action possible and keeps us going in the face of obstacles and opposition"

(Peterson 1). Mass media spends a great deal of time spreading negativity and emphasizing the impending doom caused by climate-related failures of humankind, yet that kind of mentality does nothing for actually combating the issue at hand. In a world like that, people only hear about the scientists who make grim predictions and the data that supports their research, when in reality, "hope is what makes effective action possible and keeps us going," not fear. Unfortunately, the world is suffering, but "if we notice only loss, we will have no ground for hope and perhaps no reason to struggle against future destruction" (2). Thus, while seemingly trivial, the biggest defense against climate change is to have hope, providing everyone with a "reason to struggle against future destruction." Having hope, that with effective reform and changing of norms climate change effects can be reversed, is what will give an individual the motivation to support the cause to save the planet. That motivation in turn is the catalyst for sparking a passion within individuals to join a pursuit for answers and action. Among those actions that individuals can take, is using the law.

Using the Law

The sheer lack of regulation of fossil fuels and carbon dioxide emissions has allowed oil and gas giants to profit substantially through their exploitation of the environment. Until 1970, the Environmental Protection Agency (EPA) did not even exist, allowing the combustion and mining of fossil fuels to develop an irremovable grip on American life, a stronghold which remains unchallengeable today. Even after that, it took until the late 1980s, after pollution reached an extent that "you could touch the air in New York," for people to realize that carbon dioxide release into the atmosphere was seriously damaging the planet (Dwyer 1). However, petroleum corporations are still unregulated in fracking and drilling for oil, and natural gas companies are rampant in releasing toxins into the air. According to McKibben, the fossil fuel industry has a

unique place in business, being "allowed to dump its main waste, carbon dioxide, for free. Nobody else gets that break – if you own a restaurant, you have to pay someone to cart away your trash, since piling it in the street would breed rats" (10). Right now, these giants of industry are doing everything in their power to maintain their standards of living, spending millions of dollars lobbying politicians and launching advertisements to diffuse talk of man-made climate change. Introducing stricter laws and strongly enforcing them is the only way to force these corporations "to cart away [their] trash" and stop them from mindlessly "piling [carbon dioxide] in the street." However, the process of implementing strict restrictions is easier said than done. Many politicians are essentially on the payroll of major petrochemical and gas companies, taking thousands of dollars of their campaign donations each election cycle. Waiting for elected officials to on their own right create laws on this matter is clearly not the right option given the limited time that the planet has to reverse the effects of climate change. The people, the constituents of those politicians, can definitely speed up the process by pressuring their elected officials to take action, or be forced out the next election. This process of people working together to petition the government to take action on global warming has been coined by Gloppen and St. Clair as climate change lawfare. They claim climate change lawfare to be the employment of "diverse strategies in which rights and legal institutions figure prominently, are adopted intentionally, and used strategically with the aim of helping deliver or at least catalyze social transformation and human development in their relations to climate change" (11). Essentially, a well-planned and targeted campaign spreading awareness of the issue of climate change and demanding reform in the form of governmental action can be successful in catalyzing "social transformation and human development in their relations to climate change." This course of action is a good example of how ordinary citizens can ignite climate reform on a global scale,

making decisions “adopted intentionally, and used strategically” to target the issue of climate change through governmental channels.

In a society where the EPA is centered on catering to the beliefs of an incumbent administration, even removing from its website “pages detailing the [very real] risks of climate change and the different approaches states are taking to curb emissions,” only the citizens of America can be trusted with making a positive difference for the future of America (Friedman 1). The government can be plagued by having to live up to an agenda, a bias which can force officials to vote along party lines and ignore even facts that are very true, such as “the risks of climate change.” However, people taking interest in bettering their lives can make a significant impact in contributing to new laws and regulations. The Inuits, an indigenous group of peoples from the Arctic Circle, were involved in a landmark event in 2005, when they became the pioneers of directly linking climate change with violations of human rights, bringing forth a petition against the United States before the Inter-American Human Rights Commission (IAHRC). While the petition did eventually fail, “it succeeded in bringing attention to the relationship between climate change and human rights, the nature of the problem, and the weakness of existing governance mechanisms to control the negative impacts of climate change” (19). The case sets a precedent for future peoples to pursue similar course of action by spreading awareness of the issue of climate change and how it can be combated. Highlighting the “nature of the problem, and the weaknesses of existing governance mechanisms” is the exact start needed to spark reform on a high level: the problems need to be known in order for there to be a solution. Moreover, the case elevates the urgency of dealing with climate change, establishing the issue’s credibility and making it clear on an official level the legitimate threat it poses to the wellbeing of people around the world. As the effects of climate change become ever more

serious, only the people of America, and the citizens of their respective countries around the world, can ensure that necessary change happens to counter global warming. When it comes to inspiring large-scale change on the level of the entire country, using the law is a strong avenue, one which can be influenced through intuitive climate change lawfare.

For the Children

What has to be realized is that global warming not only affects the planet, but poses serious health risks to the human population. Children are especially affected by the high air pollution levels that fuel global warming, with "[Particulate Matter of up to 2.5 microns in size]$PM_{2.5}$ penetrating deep into the lungs and passing into the bloodstream, reducing lung function and increasing respiratory symptoms such as airway irritation, difficulty breathing, and asthma. It can also induce heart attacks or irregular heartbeat" (Larr, Neidell 4). These physical particles which compose pollutants, can cause serious damage within the bodies of children, with reduced "lung function and increased respiratory symptoms such as asthma" sticking with them for life. Infants face even more danger from pollutants in the air, which "may alter the way genes function, and those epigenetic effects can damage intellectual growth and maturity later in life. A person with latent epigenetic damage might appear to be in perfect health early in life only to experience observable health problems later on" (5). The unregulated release of pollutants into the atmosphere not only contributes to increasing the greenhouse effect of the planet, but can literally "alter the way genes function" for infants who are still inside the womb, presenting extended health risks throughout their lives. Earth does not deserve the ravaging of climate change, but children, who are "some of the most vulnerable members of society," definitely should not be facing "climate change's indirect effects of derailed developmental trajectories – through conflict, vector-borne diseases, economic dislocation, undernutrition, or migration" as a

result of their elders' lack of action to protect their world (Currie, Deschenes 3). Climate change is not just about the planet, but has wide outreach of side effects including "conflict, undernutrition, or migration" resulting from the droughts and rising sea levels that result in loss of homes and lack of resources for millions around the world. Children especially should not be facing those setbacks in their developmental stages in life: the time has come to act against climate change, at least for their sake.

The Time is Now

In the 1970s leading into the 1980s, scientists and politicians alike made significant progress in understanding the threat that global warming posed to the planet. Led by the highly motivated duo of Rafe Pomerance, an environmental lobbyist for Friends of the Earth, and Gordon MacDonald, the climate change movement managed to increase EPA regulations and turn America away from its fascination with coal and oil and look to cleaner alternatives. Even Exxon and Shell, two of the world's largest oil companies, were on-board with researching alternative energy options, and were even funding research to better understand global warming. However, the election of Ronald Reagan entirely altered the environmentally cleaner landscape that was just starting to take shape, with his actions decimating the progress that had been made. By the end of the 1980s, the tide had completely shifted, with the White House actively attempting to discredit the climate change movement, and companies launching mass-media campaigns to mislead the public on the effects of global warming. That period of public purging of the climate change movement marked the end of a time of bipartisan cooperation to better the planet: until now.

The efforts of Pomerance and MacDonald failed decades ago, but their goal can still be accomplished with support from today. People have to be made aware of the severe

consequences that will result from ignoring climate change and allowing its effects to worsen each year. That newfound awareness will serve as a catalyst for inspiring the masses to take action, incorporating climate change lawfare to influence their representative politicians to create and enforce legislation addressing global warming. The annual climate change protests across the world serve to spread awareness but do little in inspiring actual change. Instead, the law has to be used to hold countries accountable, even if that means taking governments to court. In America, "a consortium of 21 American children and young adults — one of whom, Sophie Kivlehan, is Jim Hansen's (a respected scientist heavily involved in the 1980s climate debate) granddaughter — claims that the government, by 'creating a national energy system that causes climate change,' has violated its duty to protect the natural resources to which all Americans are entitled," and are suing the government for their negligence (83). That kind of action carries the sense of urgency that climate change demands, and forces the government to acknowledge global warming and even provide answers. When citizens can go to jail on charges of multiple infractions of speeding, America "violating its duty to protect the natural resources to which all Americans are entitled" should be worthy of being tried in court and then prompted to answer with change. There is no more waiting for action to be taken: the time is now.

Proponents of deregulation and a free-market economy argue that climate change legislation would stifle the growth of industry by preventing them from using their full potential. Moreover, those critics argue that climate change legislation would make corporations take a significant hit in profits, an effect that would violate their right to do fair business in the country. The monetary importance of preventing renewable energy and climate change legislation can be seen when realizing that "the five biggest oil companies have made more than $1 trillion in profits since the millennium. There's simply too much money to be made on oil and gas and coal

to go chasing after zephyrs and sunbeams" (McKibben 10). While these petrochemical giants would see a decline in profit with the implementation of regulations, they have to note that using those "zephyrs and sunbeams" for energy is what will keep humans alive in the future for them to see their profits. The effects of climate change simply are too great for companies to continue to exist unregulated while still expecting that the world will remain the same. The world is on track by 2050 to exceed the two-degree Celsius threshold of temperature increase past pre-Industrial levels. 2050 is also the year with which climate change effects become irreversible, including the continued rising of sea levels, melting of ice sheets, and increasing freak weather incidents. The petrochemical giants of today have to realize profits are going to be meaningless if the Earth becomes uninhabitable: only renewable energy is the future of their profits. For them, the time is now to act: 2050 is approaching fast.

Other critics of creating effective climate change legislation and researching alternative energy sources argue that the government cannot afford to embark on those missions with their limited budget. These people state that acting against climate change "requires investments in renewable energy, taxation of carbon, and investments in public infrastructure such as public transport, [all of which] will place further demands on public funds" (Asuncion, Gloppen 7). While enacting and enforcing climate change legislation and conducting research in advancing alternative fuels will take significant funding from the government, the cost of doing so is far less than the losses faced from the effects of climate change. In 2017, Hurricane Harvey alone caused over 125 billion dollars in damages, a number exacerbated by the freak nature of the storm – caused by climate change. Every year, billions of dollars in losses are accumulated from weather disasters relating to climate change, with one study conducted by the Natural Resources Defense Council (NRDC) stating that the US will have accrued over six trillion dollars in

damages over the coming decades resulting from climate change-related events (Denchak 16). In contrast, if America had stayed in the Paris Climate Agreement, a landmark deal to combat global warming, investing in clean energy would have gained the US nearly nineteen trillion dollars in the next thirty years (16). Clearly, America has much to gain from taking climate change seriously and addressing its effects with proactive action: the time is now.

Conclusion

There is no later time to address climate change anymore: the century of ignorance and denial, or simply, laziness, has passed, with only a few decades left before global warming does irreversible damage to the planet. The urgency of climate change cannot be stressed enough, and the time to act against its effects is now. As the window for successful intervention narrows, the world has to first universally acknowledge that climate change is real and is manmade: the time to entertain alternative theories has passed, and only mere decades remain before the Earth faces irreversible damage to its environment. Understanding that fact will allow for people to realize that climate change has to be given the seriousness it deserves, so that immediate action can be taken in order to combat its effects. For centuries, humans have been driven by their own greed and ambition, but now is the time to come together for the common good, and protect the planet against the deadly effects of global warming. If corporations and politicians do not act to preserve the planet, that is expected: they have various agendas to hinder them from doing what is right. However, the people, the citizens of America, and the rest of the countries in the world, have the ability to think free of motive, and it is their job to not only campaign for action to be taken at the governmental level, but make the small changes in their respective lives to make a difference on the global scale. The people are tasked with educating the world of the vast negative effects of global warming, challenging the government through use of the law and the

courts, and pushing for renewable resources and clean energy. Without the awareness and support of the masses, change can never be achieved, and the planet will continue to deteriorate as it is. Despite the grim future that is being foretold if a lack of action continues, the arguments developed throughout this paper should not hide the biggest and most important asset to the climate change movement: having hope. The people of the world need to have hope that every action that they take towards conservation of resources and encouraging clean practices will contribute towards reducing the effects of global warming and climate change on the planet. The year 2050 can either be a year of comeuppance for decades of failure to act against the warning signs stemming from climate change, or a year of remembrance to celebrate the efforts taken by a bipartisan coalition of people around the world who saved the planet. Again, the time is now: the future can still be changed for the better.

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