Persuasive Paper Using Rogerian Argument: Global Warming

Each morning, the warm sunrays and chirping birds invite us to awaken from our peaceful slumber. We accept the invitation with groggy eyes and rise as the green leaves rustle in the slight Georgian breeze. We live and embrace our natural habitat, yet with each morning, we start our gas- devouring SUVs to go to school, work, and the grocery store that sits two blocks away.

Perhaps this ignorance defines our existence. We are all humans, and we all make mistakes. But we may be well on our way toward making the biggest mistake in the history of our planet: undermining the magnitude of global warming.
The existence of global warming is not a subject of debate. Scientists agree that our planet is experiencing unusually warm temperatures. According to the Intergovernmental Panel on Climate Change (IPCC), "Average global surface temperature has increased by approximately 0.6oC since the late 19th century" ("Global Warming"). The National Oceanic and Atmospheric Administration agrees with this number: "Global surface temperatures have increased about 0.6oC (plus or minus 0.2oC) since the late-19th century, and about 0.4oF (0.2oC to 0.3oC) over the past 25 years" (Easterling).
The Earth's temperature is regulated by the greenhouse effect, which "is the process by which an atmosphere warms a planet." Certain atmospheric gases absorb heat and, consequently, warm the planet; these greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Because of these gases, the atmosphere "effectively forms a one-way blanket over Earth's surface," allowing solar radiation in but hindering the release of Earth's own thermal radiation. As a result, the planet absorbs 70% of the sun's radiation and maintains a surface temperature near 14oC. "This absorbed energy heats the atmosphere, oceans, land and powers life on the planet" ("Greenhouse effect"). "Without a natural greenhouse effect, the temperature of the Earth would be about...- 18oC" (Easterling).

The controversy begins upon discussion of the causes of global warming. Most scientists attribute global warming to human activities, a theory also known as anthropogenic global warming ("Global Warming"). The fact that human activity releases greenhouse gases into the atmosphere is unquestionable. "Pre-industrial levels of carbon dioxide (prior to the start of the Industrial Revolution) were about 280 parts per million by volume (ppmv), and current levels are about 370 ppmv. The concentration of CO2 in our atmosphere today, has not been exceeded in the last 420,000 years, and likely not in the last 20 million years" (Easterling). However, scientists that argue anthropogenic global warming assert that these gases are substantial enough to induce global warming. "The degree of the greenhouse effect is dependent primarily on the concentration of greenhouse gases in the planetary atmosphere" ("Greenhouse effect"). "The combustion of fossil fuels, including the coal-burning power plants, automobile exhausts, factory smokestacks, and other waste vents of the human environment contribute about 22 billion tons of carbon dioxide and other greenhouse gases into the earth's atmosphere each year...Animal agriculture, manure, natural gas, rice paddies, landfills, coal, and other anthropogenic sources contribute about 450 million tons of methane each year according to TAR [IPCC's Third Assessment Report]." As the numbers above suggest, human emission of greenhouse gases is the principal contributor to global warming. "In the Third Assessment Report, the IPCC concluded that 'most of the warming observed over the last 50 years is attributable to human activities'" ("Global Warming").

According to scientists advocating this anthropogenic theory, the irreversible ecological consequences of global warming have already appeared. These effects include rising sea levels, melting glaciers, threatened ecosystems, and increasingly extreme weather. Rising sea levels and melting glaciers are obvious consequences. "With increasing average global temperature, the water in the oceans expands in volume, and additional water enters them which had previously been locked up on land in glaciers and the polar ice caps" ("Effects of global warming"). According to a 60 Minutes report, "temperatures in the arctic are rising twice as fast as the rest of the world...Over the last few decades, the North Pole has been dramatically reduced in size." American scientist Bob Corell, who has been conducting studies on climate change since 1987, has found through his "Arctic Climate Impact Assessment" that "the glaciers there have been receding for the last 50 years...In fact, 98 percent of the world's mountain glaciers are melting...all that water will push sea levels three feet higher all around the world in 100 years." Corell claims that "there's so much greenhouse gas in the air already that more temperature rise is inevitable." Scientist Paul Mayewski of the University of Maine shares Corell's conviction. "Even if we stopped using every car, truck, and power plant-stopping all greenhouse gas emissions-Mayewski says the planet would continue to warm...about another degree" (Pelley). These ecological changes carry the potential to forever alter the Earth's ecosystems. One example is found in the Arctic, where the polar bear population, long a symbol of the cold tundra, has been suffering as a result of melting glaciers. "Polar bears can only hunt on the ice. Lunn [Canadian scientist Nick Lunn who hunts polar bears in a 30-year study that tracks their health] say the ice is breaking up three weeks earlier that it did 30 years ago. He's now finding female bears 55 pounds lighter-weaker mothers with fewer cubs" (Pelley). Extreme weather is another destructive outcome of global warming; warmer temperatures bring increased precipitation, which breeds more extreme weather. According to a 60 Minutes report, American scientist Bob Corell states, "The oceans of the Northern Hemisphere are the warmest they've been on record. When they get up in that temperature, they spin off hurricanes. Well, if it goes up another degree, it's gonna spawn these with more intensity" (Pelley). The potential consequences of global warming carry significant weight; if these effects were to be realized, then the planet's natural environment would be forever changed. As a result of the possible gravity of this global warming issue, it is imperative that we consider all sides of the issue.

Other scientists that argue the opposite position challenge the credibility of the evidence presented to warrant anthropogenic global warming. According to the American Policy Center, "There is no proof that temperature is affected by anything that man has done...even with all of their research and expensive equipment, it really is just a 'best guess.' There are just too many variables" ("There is No Global Warming"). It continues to debunk anthropogenic global warming by naming the concessions made in a United Nations' 1996 report that had declared global warming a fact. "...before releasing the report two key paragraphs were deleted from the final draft...1. 'none of the studies cited above has shown clear evidence that we can attribute the observed climate changes to increases in greenhouse gases' 2. 'no study to date has positively attributed all or part of the climate change to...man-made causes'" ("There is No Global Warming"). These scholars also offer alternative theories: global warming is a natural process whose effects have been exaggerated by the Little Ice Age (1550-1850). According to the American Policy Center, "Changes in global temperature are natural...We are at the end of the ice age in which ice covered most of North American and Northern Europe...we've already lost the glacier that used to cover the whole country." These scientists emphasize how the Little Ice Age exaggerates global warming. Because our planet has undergone a period of extreme cold weather, it is now returning to its previously warmer state. This creates the illusion that the planet is warming unnaturally. The glaciers that were created by the Little Ice Age are now melting. "Any change in temperatures, or an excessive storm or extended flooding is looked upon as a sure sign that environmental Armageddon is upon us" ("There is No Global Warming"). Also, scientists who oppose anthropogenic global warming criticize the ineptitude of the technology used to predict future effects of global warming. "The truth is computer models are able to include only two out of 14 components that make up the climate system...even if the computer power existed, scientists do not understand all the factors and the relationships between them that determine the global climate" ("There is No Global Warming"). Because scientists of this position declare global warming a natural process, the potential consequences of global warming are also a natural development. There is nothing peculiar or unusual about rising temperatures.

In spite of such arguments to the contrary, I agree with the former position-that global warming is an urgent problem that needs to be addressed immediately. Is it a coincidence that, after the Industrial Revolution, temperatures have risen to unprecedented levels? No. Humans have inhabited this planet for tens of thousands of years, and never have we experienced such warm temperatures. Rational thinking explains this phenomenon. Large-scale industrialization brought unprecedented levels of emitted greenhouse gases. These gases function to warm the Earth. If the level of these gases were to increase-as it has recently-the temperature of the planet is expected to increase-which it has. Granted, relative to the preceding Little Ice Age, the global warming effect has been amplified. Nevertheless, this does not justify our ignorance of the changes occurring in our natural environment. We have been warned of the potential consequences: rising sea levels, receding glaciers, extreme weather-to name a few. Given a problem and a possible cause, it seems that we would be able to use our unique intelligence to reach a solution, especially in the presence of such dire potential consequences. As Sir David Anthony King, the Chief Scientific Adviser to the U.K. government said, "Global warming is the biggest and most serious problem faced by us in this century. Climate change is happening and its effects are real. If we do not take [this] seriously, it will have serious consequences that will affect the generations to come" (Venkataramani). The IPCC projects that "temperatures may increase by 1.4 to 5.8 oC between 1990 and 2100" ("Global Warming"). "According to the IPCC Special Report on Emission Scenarios (SRES), by the end of the 21st century, we could expect to see carbon dioxide concentrations of anywhere from 490 to 1260 ppm (75-350% above the preindustrial concentration)" (Easterling). Such unnatural rises in temperature and greenhouse gas levels are guaranteed to produce irreversible effects. Even if we act now, the chances of success are low. This urgency provides even more incentive for immediate action. As the G8 nations stated, "While uncertainty remains in our understanding of climate change, we know enough to act now" (Pearce).

In order to resolve the issue of anthropogenic global warming, the United Nations has produced the Kyoto Protocol. This international agreement "came into force on February 16, 2005," eight years after its negotiation in December of 1997. "The objective is the 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system...As of 2006, a total of 162 countries have ratified the agreement" ("Kyoto Protocol"). "The G8 countries [that ratified the Kyoto Protocol] are responsible for 45% of global carbon dioxide emissions" (Pearce). The nations that have ratified this international treaty commit to reducing their greenhouse gas emissions. The U.S. has not ratified the Kyoto Protocol, as ratification "would result in serious harm to the economy of the United States" ("Kyoto Protocol"). Our nation has placed economic obligations before environmental responsibilities. This upset in priorities reflects our ignorance. However, as the government will not concede to strictly environmental resolutions, we must devise solutions that will prove both environmental and economical. King advocates "alternative sources of energy, which are cleaner and safer for the environment. Fusion power plants and hydrogen fuelled transport systems would prove to be safer options for the future generation. Solar energy and tidal energy are the other potential energy sources in the years to come" (Venkataramani). King has the right idea. Finding alternative energy sources and promoting these alternatives will not only protect the environment but also protect our economy. These investments into our future are guaranteed to succeed. As King states, "Good ecology is also good economics in the long term" (Venkataramani). By finding alternative resources, we would also relieve ourselves from the dependence we have developed on non-renewable resources."Based on estimates by NASA's Goddard Institute for Space Studies, 2005 was the warmest year since reliable wide-spread instrumental measurements became available in the late 1800s, beating the previous record set in 1998 by a few hundredths of a degree Celsius" ("Global Warming"). Mother Earth has a fever, and it is our obligation as her children to aid her back into health. Our existence has posed a threat to the survival of our environment. Forget ignorance. We must act in harmony with our surroundings. By destroying and exploiting our natural home, we will only destroy ourselves.

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