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No One to Blame but Ourselves (2019-2020)

Shelby Soule SUNY Cortland

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"No One to Blame but Ourselves," Shelby Soule (research inquiry example)

Questions to Consider For Discussion and Reflection

As you read Soule's essay, consider:

- Soule's essay uses devices that we frequently associate with "objective" academic writing, such as the avoidance of the personal pronoun "I", the incorporation of in-text citations, and formal language. However, there is no doubt that an interpretive argument is being made. Can you pinpoint specific places where Soule constructs her rhetorical position?
- How does Soule synthesize an original stance by critiquing other researchers' actions and conclusions? Where, specifically, does she offer a critical evaluation of sources, and how does she balance her critique with alternate argument?
- Soule uses research with different chronological foci. What are these chronological categories, and how does their presentation help organize Soule's argument? Can you imagine other kinds of research topics that would benefit from a chronologically oriented analysis?

No One to Blame but Ourselves by Shelby Soule

Since the early 1900s, global temperatures have been rising in a trend of increasing rate, leaving us currently in a world about 0.8°C warmer than it was two centuries ago (Oppenheimer, 2015, p. 675). This may not sound like a significant increase, but increasing temperature brings along with it a variety of serious consequences, including impacts on sea level. These impacts range from heat expansion of the Earth's bodies of water to the melting of mountain glaciers and polar ice caps. Such expansion and melting not only contributes to the creation of ever-warmer climates, but also causes incredible amounts of flooding and poses great risks to seaside communities. The damage from past natural disasters and the potential for future ones could almost be seen as payback, considering that humans have been the main source of this global climate change. Prior to industrial times, global average surface temperatures were far more consistent and barely increasing at all. It is our careless burning of fossil fuels and neglect to our planet that has brought us to this point, and if no drastic changes are made in the near future, then it is our ignorance that will bring us to the breaking point.

Since the late 1700s, the activities of humans have had a devastating impact on the Earth's atmosphere, raising carbon dioxide concentration by 40% (Shukla, J. B., Verma, M., & Misra, A. K., 2017). This process has mainly involved the burning of fossil fuels and melting of permafrost, which contain carbon that has been trapped there for millenia. Before humans, the natural release of carbon dioxide would be offset through its use by organic matter, but with our ever-increasing demand for fossil fuels and deforestation, the release of carbon dioxide has far out-balanced its organic use. Once released into the atmosphere, carbon dioxide gases stick around for hundreds to thousands of years, all the while acting as a blanket to the Earth, lending itself to the name "greenhouse gas". Heat trapped in by this carbon dioxide blanket is one of the

greatest contributors to global climate change and will continue to be for at least another century even if we do reduce these emissions.

Humans tend to be ignorant creatures that only consider the "here and now" side of problems, pushing off the long-term impacts until they become the new "here and now". Humans affiliated with large companies in particular tend to be more interested in doing whatever results in the greatest profit rather than what is best for the planet. A painfully perfect example of this selfishness is provided by Exxon, the world's largest oil company. Back in 1978, James F. Black, a senior scientist at Exxon, met with the company's executives to discuss his research on the greenhouse effect. Black explained that there was a general scientific consensus that the burning of fossil fuels was releasing carbon dioxide into the atmosphere and therefore influencing climate change.

Exxon took this information and after 4 years of funneling millions of dollars into further research, they determined that the problem was actually far more serious than Black had predicted. Another senior researcher, Ken Croasdale, performed even more research into the problem and reported in 1991 that the burning of fossil fuels was releasing greenhouse gases into the atmosphere and indeed causing global warming. His interpretation of this fact, however, was rather absurd. Instead of considering the negative impacts that this warming would have on the Earth and its inhabitants, Croasdale focused on the benefits that a warmer climate would have on Exxon's drilling operations, as exploration would be made easier and drilling in the Arctic could take place over a period of up to five months compared to two. Pleased to hear the good news, Exxon set off to improve their infrastructure.

As a result of these findings, Exxon and other major oil companies began laying plans to move into the Arctic, and started to build their new drilling platforms with higher decks, to compensate for the anticipated rises in sea level. (McKibben, 2018, p. 52)

Not only did Exxon misuse this valuable information, they knowingly chose to not share it with the public, and instead made it seem as though they were uncertain about their evidence of climate change. Somehow the situation managed to worsen as years passed and Exxon, along with other big oil companies, joined the Global Climate Coalition to have their say against the proposal of a new tax on fossil fuels. This was done in the form of a video, created in cooperation with the National Coal Association and the American Petroleum Institute, which promoted the idea that climate change would actually be beneficial because the added carbon dioxide in the atmosphere would somehow increase plant growth, thus ending world hunger.

Although this sounds absolutely ridiculous and is completely false, the video convinced enough people to gain significant support in their effort. Exxon's selfishness and misuse of information has cost humankind decades of time that could have been spent trying to repair the damage we have done. Their lies have gotten stuck in the heads of so many people that, "in 2017, polls found that almost ninety percent of Americans did not know that there was a scientific consensus on global warming" (McKibben, 2018, p. 53). Society has been told so many lies and exaggerations that it clearly needs to hear the truth and understand the consequences before our planet is damaged beyond repair.

The truth is that as temperatures continue to increase, we find that glaciers and polar ice caps are shrinking while the Earth's bodies of water are growing. As temperatures rise, substances have a tendency to increase in volume due to the process of thermal expansion. The expansion of the

Earth's bodies of water due to warming has contributed to about 40% of global sea level rise (Voosen, 2016). As this occurs, warm water is not only expanding and creating larger bodies of water, it is being transported further and to new locations. As warmer water reaches areas with glaciers and ice caps, melting rates increase and these frozen structures become unstable, making them more likely to break apart. Through the use of satellite imaging, researchers are able to precisely measure the size of glaciers and monitor their rate of melting, which shows a distinct correlation between rising global temperatures and melting of glaciers, as well as a direct correlation between melting and rising sea levels. If melting continues at its current rate, or increases as it is predicted to do alongside temperature increases, large ice structures have the potential to drastically raise sea level.

Antarctica and Greenland ice sheets are the two largest ice sheets containing nearly 99% of the freshwater ice on the Earth. It is estimated that if the Greenland ice sheet melts completely, sea level may rise about 6 m, while the melting of Antarctic ice sheet may cause a sea level rise of about 60 m. It is estimated that Antarctica ice sheet alone can contribute more than a meter of sea level rise by the year 2100 and more than 15 m by the year 2500. (Shukla, et al., 2017)

Core samples of glaciers worldwide are like a window into the history of their climates. Variations in the formed ice layers within a sample hold incredible amounts of information upon analysis, as glaciers and ice sheets are excellent at preserving atmospheric data. Studies of these core samples allow researchers to determine a climate history based upon stored isotopes within the H2O, extra trapped gases, dust and other atmospheric particles, and much more. Furthermore, analysis of these samples reveals the chemical composition of the atmosphere at the time of freezing. Although it is true that climate change has taken place in the past to some extent, data from core samples "show us that the levels of these so-called 'greenhouse' gases have never been higher over the last 800,000 years than they are today" (Thompson, 2010, p. 136). This spike in greenhouse gases in the modern atmosphere clearly shows that the current climate change was largely created by human activity, and as society refuses to believe these facts after decades of lies, human activity will continue to worsen the situation to the point of no return.

In December of 2015, members of the United Nations Framework Convention on Climate Change (UNFCCC) met in Paris to set a plan, known as the Paris Agreement, for reducing carbon dioxide emissions in the following decades. At this convention, the UNFCCC proposed limiting future emissions in such a way that the global rise in temperatures would not exceed 2°C, with a goal of 1.5°C. Participating countries wrote nationally determined contributions (NDCs) to state how they would be helping to limit emissions by the year 2030. Unfortunately for many of the less-developed countries, these contributions rely upon foreign investment, which is already lacking, and unfortunately for the planet, the goals set forth by participating countries are just that: mere goals. There is no part of the Paris Agreement that is contractually binding. It is no more than a suggestion that we should reduce emissions in an attempt to limit temperature increase, and as such, it has not been taken seriously.

The Paris Agreement commits to keeping warming below 2C. It's a target that is beyond reckless. When it was unveiled in Copenhagen in 2009, the African delegates called it "a death sentence". The slogan of several low-lying island nations is "1.5 to stay alive". At the last minute, a clause was added to the Paris Agreement that says countries will pursue 'efforts to limit the temperature increase to 1.5°C. Not only is this non-binding but it is a lie: we are making no such efforts. (Campbell, 2016, p. 884)

Even if society is somehow able to manage climate change enough to limit temperature increases to 1.5°C, we will still be facing devastating consequences. Sea levels are currently rising as a result, and will continue to do so for decades even if the temperature increase stabilizes at the 1.5°C point, due to the rate at which glaciers and ice caps melt. It is important to remember that this warming will take place globally on varying scales, not just around the poles, and warming by even 1.5°C will drastically change the lives of marine organisms. Fish and other creatures that are able to adapt will relocate and potentially survive, leaving behind seagrass, kelp and other vital parts of marine ecosystems. In fact, Rachel Warren, from the Tyndall Centre for Climate Change Research in the UK stated that "'At 1.5°C, already a 70 to 90 per cent decline in existing coral reefs is projected" (Lawton, 2019), threatening the lives of over a million species which are supported by these reefs. As a result of warming-related deaths and relocation, fishing industries and seaside villages alike will face shortages, as it is predicted that "catches of marine fish will decrease by 1.5 million tonnes a year under 1.5°C warming" (Lawton, 2019).

By 2100, up to 150 million people will be directly affected by sea level rise, through effects including flooding, erosion, contamination of drinking water, inundation of agriculture, decline of fisheries and loss of ecosystem services such as storm defenses from mangroves and other coastal ecosystems. (Lawton, 2019)

Projections of our potential future climate show that even if society agrees to gradually move away from the burning of fossil fuels in favor of green, renewable energy, we will still face increasing global temperatures throughout the 21st century. However, this increase is at a much more manageable rate and has the potential to turn into a steady climate. Life on Earth will still become more difficult, and society will struggle as it faces potential sea level rises of up to two feet worldwide (Oppenheimer, 2015, p. 676). This will be devastating for countries that are less wealthy and less able to prepare, but it is unavoidable and doesn't even begin to compare to the projection for a future without taking any action. That option may very well result in the extinction of humans, due to rapid increases in temperature, ranging anywhere from 3-7°C over the course of the 21st century (Oppenheimer, 2015, p. 676). In fact, "the current trajectory of greenhouse emissions threatens warming of 4°C by 2100. Commitments made in Paris will get us to 2.9°C at best" (Lawton, 2019). There is no doubt that this extreme change would cause both intense desertification and sea level rise, creating a climate that would be difficult to survive even for the wealthiest of countries.

Despite the fact that there is still time to make changes in our daily lives that could potentially reduce the amount of damage done by climate change, humans are far too preoccupied with consumerism and industry. First world countries which have the most access to resources and could therefore most significantly contribute to an effort in reducing carbon dioxide emissions are unfortunately the same countries which couldn't seem to care less. Even more disappointing is the fact that these countries are the greatest contributors of emissions rather than aid.

The United States, for example, produces about 25% of the world's carbon dioxide emissions with only about 4% of the world's population (Baer, 2008, p. 60). Meanwhile, people in third world countries face the most devastating effects of climate change, with rampant spread of disease, unbearable heat and periods of drought which make hunger an increasingly difficult obstacle to overcome. Considering the scale of cooperation required in order to combat climate change, with an already minimal amount of aid being given to third world countries, chances of

recovery are slim. In all likelihood, by the end of the century humans will face extinction, with no one to blame for our demise but ourselves.

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