U.S. Climate Change Policy: An Analysis of the Primary Stakeholders

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On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Abstract

In the last fifty years, many civilizations have contributed significantly to anthropogenic climate change, or "human-made" climate change, through several actions such as the burning of fossil fuels from heat, electricity, and transportation. Although the scientific community is largely synonymous with the perspective that the rise in Earth's global temperature is not just a cyclic or natural phenomenon of climate, there is still a large disparity in the general public and policymakers' views on these scientific findings. The American culture of skepticism and contrarianism has fueled the media to instill doubt and uncertainty in climate change, when the health and medical repercussions of it are already being manifested. In addition, many corporations fuel this disbelief of climate change for their own profit or agenda, further confusing the public. On the other hand, some policymakers either outright neglect the topic or lack the updated knowledge from the scientific community. These three primary stakeholders: the general public, the scientific community, and policymakers all play a major role in climate change mitigation and adaptation and will be analyzed through historical case studies and policy analysis coupled with Actor-Network Theory in this paper. The findings of this research depict a deep political divide in climate change policy prioritization which is translated to the public through media, and case studies such as the ExxonMobil scandal reflect an unwillingness of large and influential organizations to take proper mitigation measures.

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Introduction

In the European heatwave of 2003, over seventy thousand excess deaths were recorded. This is just *one* example of the impact of extremely high temperatures. Throughout the last fifty years, several human actions, such as the burning of fossil fuels from heat, electricity, and transportation, have released large amounts of greenhouse gases into the atmosphere, which ultimately raise the Earth's temperature (*Climate change and health* 2018). Extreme heat is just one result of climate change, along with extreme weather events, rising sea levels, a loss of biodiversity, and many others. These climate factors have long-lasting health impacts, including air-pollution related health effects, an increase in water/food-borne diseases, a food/water shortage, and mental health effects, just to name a few. While the repercussions of climate change are very real and very disturbing, one in five American adults still believe that there is no evidence of global climate change (*Americans' views on climate change and climate scientists* 2016).

When evaluating the reason behind persistent resistance to climate change's existence and effects, one must take into account the key stakeholders. The three stakeholders that this research paper will evaluate are US governmental bodies, the public, and the scientific community. It is important to note that while these three stakeholders are non-exhaustive in impacting climate change policy in the United States, they were chosen because they are arguably the three largest bodies of influence. Historically, state and federal-level legislation is the largest stepping stone for social, economic, and overall societal progression —and climate change is no exception. Along with governmental bodies, the public also plays a role in shifting

the prioritization of climate change. In a time where political beliefs are becoming more and more polarized, the US is experiencing a deep divide between the Democratic and Republican stance on climate change (Kamarck, 2019). Lastly, the scientific community has consistently provided incontrovertible evidence for the influence of human action on climate change, yet they lack the power to implement long term mitigation and adaptation techniques. Several organizations such as the Environmental Protection Agency (EPA), Intergovernmental Panel on Climate Change (IPCC), National Center for Atmospheric Research (NCAR) and many more have provided immeasurable research publishings highlighting the anthropogenic effects of climate change. In addition, the scientific community actor can be divided into further actors, with academic institutions such as university-funded research as one actor, and large, profit-driven gas companies such as ExxonMobil as another actor.

The STS framework of Actor-Network Theory (ANT) will be used to assist in the evaluation of the relationship between policymakers, the public, and the academic community in the network of climate change policy. ANT has the ability to explain social and political effects generated as a result of associations between different actors, and thus can prove helpful for depicting a complex issue like U.S. climate change policy. Documentary research methods and policy analyses will be employed to answer the question, "How is US climate change data by the scientific community translated into public beliefs and policy, and why is it important?" First, the culture of contrarianism and skepticism through the media will be explored, and then the lack of accountability and desire for updated knowledge for many important stakeholders will be examined. Later, a few case studies and climate change evidence history will be detailed. Finally, conclusions will be made on the current state of US climate change policy and the main barriers. Although the scientific community is overwhelmingly synonymous with their findings that

climate change greatly affects public health outcomes, U.S. policy makers experience a great divide in the prioritization of climate change policy that can be attributed to mass public confusion, a lack of accountability, and a lack of accurate and updated knowledge.

The Role of the Media in Mass Public Confusion

Research shows that much of the public receives its scientific knowledge from mass media, ranging from television to newspapers to social media platforms (Boykoff & Rajan, 2007). The scientific stories that the media chooses to cover also help shape the public's political and economic views, so the media plays an integral role in the portrayal of climate science and man-made climate change — also known as anthropogenic climate change. The three spheres of media, science, and policy must be analyzed in order to understand the mass public confusion and differing opinions of climate change in the U.S. today. For example, historically, the United States media coverage has been reasonably more critical than the UK counterparts with regards to this topic, and the external factors of skepticism and contrarianism come into play. Boykoff and Rajan argue "an emphasis on economic freedom" and "stronger personal consumption patterns" influence the actions and expectations of American citizens and consequently hinder the US from taking action towards a reduction in carbon dioxide emissions. The trait of skepticism embedded in US culture has caused the rise of "climate-contrarians," many of which come from accredited US universities and gained traction in the media. One study found that across all media sources in the United States, climate change contrarian (CCC) media visibility was 49% greater than climate change scientist (CCS) media. One example of contrarian culture being embedded in the US is when Michael Crichton, challenger of anthropogenic climate change and author of a fictional book about an environmental terrorist group, was welcomed to the White House to discuss climate policy with George W. Bush. In addition, former Chair of the

Environment and Public Works Committee Republican Senator James Inhofe stated in a speech that climate change was "the greatest hoax ever perpetrated by the American people" in 2003. Both of these instances are brought up often in climate policy debates, demonstrating that even subtle actions of the country's government have the ability to shift the narrative on climate change completely.

A Lack of Accountability for Corporations, the Government, and Journalists

In addition to mass public confusion as a reason for resistance to climate change action and belief, there is a severe lack of accountability to the general public that large corporations, the United States government, and journalists face with regards to measurable climate change mitigation and adaptation outcomes. Only recently have fossil fuel companies begun to face pressure legally and politically to cease the spread of climate misinformation, and even now many companies' efforts are ineffective in affecting long-term climate change. Not only should we hold these companies responsible for stopping disinformation, but also for their business planning, policies, and disclosure. In terms of business planning, large companies' business plans should account for fewer carbon emissions, and in terms of policies, they must reflect fair and effective climate policies. Lastly, companies must fully disclose their risks to climate change and also the "financial and physical risks of climate change to their business operations" (*The Climate Accountability Scorecard Updated* 2018). The Security and Exchange Commission (SEC) has received many requests to pass requirements on companies to disclose all climate change risks to investors and market participants, but there is currently no standardized and mandated method of disclosure.

Besides corporations, the United States government is never held accountable to its citizens and the world in general for decreasing climate change drivers such as carbon emissions. Over the last few years, nine cities/counties have sued major fossil fuel companies due to climate change damages, demanding compensation in return. However, the federal appeals court dismissed the national youth climate lawsuit in January of 2020 (Hasemyer, 2020). This repeated dismissal of public and scientific requests for accountability displays the sheer disregard and failure of the US government to reflect the needs of the people.

Finally, there is a lack of accountability with journalists reporting on climate change. In modern-day journalism, many journalists are tasked with "mundane pressures" such as available space, economic constraints, and time deadlines. These, along with norms and values in a corporate-controlled media space can deter them from investigating sources thoroughly and they are instead faced with contradictory data and findings. Indeed, there has been a decrease in investigative journalism and an increase in sensationalism journalism, in which the motive is not necessarily to relay the most truthful or scientifically sound information, but more likely to excite the greatest number of readers or viewers. This is significant in the context of climate change information delivery to the public because what may be perceived as shocking or jarring statistics and facts dilute the scientific accuracy. Journalists should be held accountable for successfully translating scientific knowledge on climate change into layman's terms for the public without distorting facts and statistics in the pursuit of public engagement and entertainment. In an era of "fake news" it is important that media outlets issue corrections and inaccuracies they discover, follow a code of ethics, and take personal and professional responsibility for the content they publish (Bagdikian, 2007).

A Resistance to Updated Knowledge

Lastly, a primary driver of climate change disbelief and disregard is due to a lack of accurate and updated knowledge by many U.S. governmental bodies. In 2019, there were 130 members of congress who had expressed doubt or outright denial of climate change. All but one of these congressmen were Republican, which further perpetuates the current political divide. One of several examples includes Alabama Senator Richard Shelby who claims the "climate change phenomenon is cyclical" even though almost the entirety of the scientific community agrees that climate change is mainly man-made and the vast environmental and health concerns we are facing due to it are not simply because of natural phenomenons (Cranley, 2019).

There are several potential explanations for why right-leaning politicians and civilians are more likely to doubt the severity or existence of climate change, but one such explanation can be explored through the concept of cognitive dissonance. Cognitive dissonance theory is a psychological theory that dates back to 1957 when Leon Festinger defined cognitive dissonance as conflicting attitudes, beliefs, or behaviors (Mcleod). This leads to individuals attempting to reduce the psychological tension one way or another. A study done by researchers in the Department of Psychology at NYU suggests that political ideology is correlated to the amount of dissonance avoidance experienced by an individual, where dissonance avoidance includes actions taken to minimize cognitive dissonance (Nam et al., 2013). This study demonstrated that conservative individuals are more likely to actively minimize dissonance, and one can make the assumption that this concept is at play with climate change denial. If the findings from this study are valid, it would imply that for some conservative individuals, it is easier to deny climate change or minimize its severity than to accept the reality that many of their daily actions, such as simply driving a gasoline-powered vehicle or consuming meat/dairy products, greatly negatively affect the environment and require conscious adaptation and innovation to mediate. This

explanation, however, is simply one piece of the puzzle, and other factors such as economic profit also explain why political affiliation is strongly tied to climate change priority. We must begin to hold our policymakers accountable for staying up to date on scientific findings, and not allow for climate change occurrence to be muddled by factors such as personal economic gain and psychological dissonance Actors in the network of US climate change policy such as the general public and the scientific community should be given the voice and platform to demand transparency from policymakers and hold them to a higher standard when making claims on the evidence of climate change.

ANT and Climate Change Perspective

The STS framework of Actor-Network theory can be applied to the analysis of climate change policy in that through it we are able to establish three primary stakeholders: the general public, the scientific community, and the policymakers. These three stakeholders are so interconnected in the network of climate change in that each play a significant role in shaping the perspective and subsequent actions we as a society take on climate change mitigation and adaptation. The public has the power to apply pressure on policymakers as well as cherry-pick findings from the scientific community. Also, the scientific community, oftentimes with the assistance of media platforms, has the opportunity to educate the public and policymakers as well as raise awareness of health outcomes of climate change. Lastly, the policymakers hold arguably the most power in this network because they can dictate large-scale changes with regards to climate change mitigation, and laws enacted on a federal or even state level can have the ability to reduce the influence of climate change drivers drastically. It is important to note, though, that like with any other network, this actor-network has limitations in terms of complexity. For example, international organizations such as the United Nations and the IPCC

(Intergovernmental Panel on Climate Change) must be excluded as actors since the scope of this network is limited to a United States scale. Regardless of limitations, though, many key relationships can be highlighted using the ANT framework.

Historical Case Studies

The ExxonMobil Climate Scandal

In order to analyze these three primary stakeholders of climate change policy in the U.S., it is imperative to discuss a few historical case studies as a documentary research method. The first to be discussed is the Exxonmobil scandal that rose to the surface of media and politics in 2015. Essentially, Exxonmobil, one of the leading gas and oil companies, conducted in-house research studies pertaining to their and other companies' contributions to climate change in the 1970s, and through their findings of their responsibility, they moved on to fund decades of the spread of falsified information (Hall, 2015). The sheer lack of social responsibility to take accountability for their carbon emissions and increasing global temperature and instead conjure a false narrative to mass confuse the public for their own profits and agenda is appalling. A more detailed description of this historical case study will be highlighted in the next few paragraphs.

In September and October of 2015, researchers from InsideClimate News, the Los Angeles Times, and the Columbia Graduate School of Journalism released information that Exxon was aware of the causes of climate change and dangers they contributed to it since the late seventies (*Exxon's Climate Denial History: A Timeline*). Shortly after, in November 2015, New York State Attorney General Eric T. Schneiderman began an investigation into Exxon to determine if they had in fact lied to civilians or investors about the risks of climate change (Gillis & Krauss, 2015). After a four year case, Schneiderman failed to prove that Exxon had

misrepresented potential costs of climate change. However, although no legal repercussions could be taken against Exxon, this news sparked an uproar among the public, creating the #ExxonKnew movement, which included state-level petitions and protests against the company. State level campaigns of #ExxonKnew included Iowa, Maine, Maryland, New Hampshire, Oregon, Vermont, and Washington. In order to understand the calculated effort of confusion and misinformation by Exxon, one must evaluate their timeline of climate change efforts.

Their findings began as early as 1957, where scientists of the company published a paper that stated that although there are other contributors to carbon dioxide release such as soil, "a much greater amount [of CO2] has resulted from the combustion of fossil fuels" (Brannon, 1957). This indicates that Exxon's scientists understood correlations between carbon emissions and fossil fuels. Later, in 1978, an internal briefing paper produced by a scientist under the Exxon's Product Research Division, James Black, wrote that people "have a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical." In the years that followed ExxonMobil clearly had a choice of whether or not to inform the public and their investors of this research and bear some responsibility for climate change , or instead fuel confusion — only the latter was done. In 1983 Exxon cut their climate research funding by over 83%, and in 1989 Exxon along with other fossil fuel companies created the Global Climate Coalition, which led aggressive lobbying and public relations efforts against the idea that greenhouse gas emissions lead to global warming (Revkin, 2009). The juxtaposition between Exxon's internal research and the GCC's agenda is jarring, and it is probable that information released on climate change by Exxon and other oil companies is based solely on profit-driven incentives and not social responsibility. One might argue that ExxonMobil should not be held accountable for perpetuating contributions to carbon emissions because although they

knew of their impact on climate change, they had no good alternative for oil and gas, and it is not ethically wrong to act in their own interests. While it is true that renewable energy alternatives are still being developed, many European oil counterparts have begun investing in renewable energy and ExxonMobil has shown tremendous resistance to invest in the environment. In addition, gas and oil companies are powerful in the sense that they have the means to fund research programs for renewable energy, and not taking full advantage of their power and money is not helpful as drastic changes are needed.

What began as withholding of information later turned into blatant lies, such as when in October 1997 Exxon CEO Lee Raymond stated that the world's climate was not changing, and if it was, fossil fuels did not play a role at all. When examining this series of events that ultimately led up to the exposing of ExxonMobil, one must understand the amount of impact and the power that the company has as a stakeholder. Although not explicitly stated as a stakeholder in the Actor-Network of climate change perception mentioned previously, oil and gas companies such as Exxon are tied to the scientific community stakeholder, as they have research sectors with mass amounts of funding, and thus the ability to greatly alter climate change perception in the United States. Overall, the ExxonMobil Climate Scandal case study indicates the ability for large companies to facilitate and feed mass public confusion and contradictory perspectives on climate change.

The Urgenda v. Netherlands Case

Another historical case study that can depict the lack of accountability and updated knowledge in the United States regarding climate change is the comparison of the Urgenda v. Netherlands case to United States efforts. In 2015, the Urgenda Foundation, a Dutch

environmental group, sued the Dutch government on the basis that the government's existing pledge to the UN to reduce greenhouse gas emissions to 25% below 1990 levels by 2020 (as a part of the Paris Climate Agreement) was not being met. A key principle that the Urgenda Foundation felt that Dutch citizens were being infringed upon was the "doctrine of hazardous negligence," in which the Dutch government's lack of adequate action on climate change was deemed "hazardous" to the nation. The court ordered the Dutch state to meet the UN commitment, and although it did not specify how the government should do so, offered suggestions for emission reductions (*Urgenda Foundation v. State of the Netherlands* 2020). This is an international example of a government taking accountability for its lack of action towards the climate, and it can be compared to the United States efforts.

During its time in the Paris Climate Agreement, the United States signed a Nationally Determined Contribution (NDC) similar to the commitment of the Netherlands, in which the countries communicated actions they would take in order to reach the goals of the Paris Climate Agreement in 2015 (*The Paris Agreement*). For the United States this included reducing greenhouse gas emissions by 17 percent the 2005 level by 2020. In 2014, the U.S. greenhouse gas emissions totaled to 6,870 million metric tons (or 15.1 trillion pounds) of carbon dioxide equivalents, which was a 7% increase when compared to 1990, but a 7% decrease from 2005. In 2019, GHG emissions were 6,577 million metric tons of carbon dioxide equivalents, only 13 percent below 2005 levels (*Inventory of U.S. Greenhouse Gas Emissions and Sinks* 2021). This calculates to be a 4 percent shortcoming in what the United States committed to in the NDC, and the United States government should be held accountable the same way the Dutch government was in mediating these numbers through more intense efforts. This 4 percent gap demonstrates that large-scale changes made by policymakers are needed, and imply that the most impactful

stakeholder in the Actor-Network of climate change may in fact be the U.S. governmental bodies. The power difference between the public and governmental influence on making large-scale climate change mitigation deliverables should encourage citizens not only to make conscious individual choices to help the environment, but to more importantly apply pressure on politicians and governmental bodies for far-reaching goals.

Policy Analysis

Pre-, During, and Post- Trump Administration

While the issues of climate change and lack of action by the U.S. are now well defined, in order to further investigate the United States governmental bodies as a stakeholder in climate change, one must first select success indicators. In this case, when referring to carbon emissions, common indicators of climate change established by the Environmental Protection Agency (EPA) are GHG emissions in million metric tons and U.S. average surface temperature in Fahrenheit. With these indicators, the impact of policy and policy changes on climate change can be evaluated. United States modern-day policy regarding climate change will now be evaluated, and an emphasis will be put on the Trump Administration's actions.

While the Obama Administration (2008-2016) put forth many helpful climate policies towards the last two years of office, many were displeased that he did not push for a more comprehensive national climate plan early on, especially during his first two years in office because of the democratic majorities in congress (Lavelle, 2020). Instead, he was more concerned with other priorities, mainly the economic crisis the nation was facing when he came into office. In August 2015, the Clean Power Plan was passed, which had many claims, one being to reduce carbon emissions by 32 percent from 2005 levels by 2030. It also included

frameworks to provide health benefits such as 90,000 fewer asthma attacks in children, as well as drive investment in clean energy technologies, resulting in 30 percent more renewable energy generation in 2030. According to an analysis by the Energy Information Administration, the Clean Power Plan was relatively successful in decreasing CO2 emissions, increasing energy efficiency savings, and increasing renewable energy generation (*U.S. Energy Information Administration - EIA - Independent Statistics and Analysis* 2015). However, although coal production decreased during the Obama administration, the study found the changes made were likely to be temporary, and in the coming decades coal production would increase again if the same Clean Power Plan implementations were used. In addition, s major change under the Obama administration was a shift towards natural gas, which still emits carbon dioxide but is better than traditional fuel sources. Other key actions taken by the Obama administration include the rejection of the Keystone XL tar sands pipeline, a climate deal with China, and the Paris Climate Accord. In addition, in terms of the success indicators mentioned previously, the surface temperature in 48 states fluctuated from 2.23 degrees Fahrenheit in 2006 to 0.27 degrees Fahrenheit in 2008, and back up to 2.38 degrees Fahrenheit in 2015 (*Climate Change Indicators: U.S. and Global Temperature* 2020). Lastly, carbon dioxide emissions began at 6,122 million metric tons in 2005, and decreased to 5,556 metric tons in 2014. This indicates that many of the Obama administration's efforts to reduce carbon emissions did succeed.

On the other hand, climate change policy experienced a setback during the Trump administration (2017-2021). Research conducted by Harvard professors David Cutler and Francesca Domicini explore projected effects of the Trump administration's setbacks on climate policy in three categories: air quality, water quality, and chemicals (David Cutler, 2018). In terms of air quality, the administration repealed the Clean Power Plan, which can lead to

increases in air particulate matter exposure. This included an estimated 36,000 excess deaths over a decade and an estimated 630,000 cases of respiratory-related illnesses in children over a decade. In terms of water quality, the administration repealed the "Waters of the United States Rule" that highlighted water resource management, and this policy change could expose water sources for approximately 17 million residents, many of which depend on small streams for drinking water. Lastly, in terms of chemical-related climate policy changes, the Trump administration has reduced and delayed many chemical bans, exposing the public to three dangerous carcinogens. As for national surface temperature and national carbon emissions, data from the past five years has not been compiled on the EPA website thus far so it is hard to compare those indicators directly to the Obama administration. However, it is clear that many actions and inactions taken by the Trump Administration greatly restricted the United States' ability to be progressor in climate change policy. The hope is that the new Biden Administration (2021-) actions such as the rejoining of the Paris Climate Agreement will reflect well on governmental bodies' ability to mitigate and adapt to climate change. Overall, analyses of the impact of legislative changes on climate indicators further enforce the notion that governmental bodies are the true dictators of climate change. Actor-Network theory has revealed the impact of the power dynamics between governmental bodies versus the scientific community and the general public. While actors such as scientists, engineers, and everyday citizens have the ability to monitor their carbon footprint to an extent and make some large scale changes, the pathway from lab bench to policy implementation is an obstructive one, and governmental bodies hold the ultimate say in the future of our climate.

Conclusion

The United States is currently experiencing a deep political polarization in climate change policy prioritization, with the right either minimizing or flat out denying its existence, and the left pushing for urgency in mitigation and adaptation policies. Several factors, including mass public confusion, a lack of accountability, and a lack of updated knowledge contribute to climate change denial among the three overarching stakeholders in the Actor-Network of climate change: the public, scientific community, and policymakers. While scientists continuously repeat studies that correlate climate change to human actions, there is still resistance from many individuals, in part due to the media's role in embedding skepticism and sensationalism in the United States. Examples such as Senator Jim Inhofe bringing a snowball to the senate floor as "evidence" for climate change being a hoax is worrisome and points to a deep lack of knowledge some of our most influential national leaders experience.

In terms of the future outcomes of these findings, it is clear that in order for adaptation and mitigation techniques to be instilled before the concern of human extinction becomes very real, many improvements are required from all stakeholders. Scientific research papers must be taken more seriously by those in governmental bodies, and the U.S. media must make an active effort to deter and eliminate misinformation from the public. In addition, policymakers must begin thinking of the long-term effects of climate change before "long-term" becomes very near. Still, there is hope that through the acknowledgement of the deception by either the media or large oil and gas corporations like ExxonMobil regarding climate change, we can move forward with steering the nation towards long-term mitigation and adaptation techniques to mediate this crisis.

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