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Media Consumption Effects On Climate Change Beliefs

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Media Consumption Effects On Climate Change Beliefs

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Haley Penrod
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Abstract

Climate change is in everyday conversation and on the platform for many elections. This issue has grown bigger to where action needs to be taken in order to counteract its effects. One way to examine this subject is through the media. Media allows for an outlet of communication between those with vital information and the public audience. This usage of media can be influential in informing people, as well as changing causation beliefs towards either side. Through this project, the question of how media consumption affects people's climate change causation beliefs is examined. Using data provided through the 2016 American National Election Survey, relationships between media and climate change causation were exposed. Partisanship is also examined in the project as a factor in influencing media's information as it is consumed by the audience and is positively associated with climate causation beliefs. Results indicate that media consumption does have an influence on climate beliefs in some circumstances.

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Problem Statement

Democracies allow citizens to be in control of their government. Citizens have the ability to choose who represents them, and they are able to vote directly about amendments that are asked at the polls. Those who are informed with facts about candidates that are responsive see similar electoral outcomes (Sanders et. al 2021). Voting for what is the best idea, solution, or person for the issue is much harder than it seems. Partisanship is an integral part in moving these views towards either side of the aisle towards who or what the citizen should vote for. The information out there is ready for citizens to consume. Media allows for this information to be communicated through easy to understand channels, like news articles, evening news segments, and online news sources. Conveniently, the media puts all the information that they deem necessary and important into the article. Learning through media has become the way to be informed about what is happening around the world. It is very convenient to turn on the television or surf online news outlets to find the up to date information about the topic or person you plan to vote for or on. In addition, citizen's beliefs, values, and opinions matter when it comes to what sources they get their media from and what information from those sources they actually consume. Discussed previously was partisanship's place in viewing important topics and leaders. This is where these devout beliefs are integral to the knowing which information is filtered through. Information that is consumed may be influenced by these values, beliefs, and opinions that are driven by partisanship.

In today's society, climate change has become a relevant issue. It is at the center of debate for presidential elections, and on the international level as a threat to society's everyday lives. Citizens should be well informed about the topic before taking this to the polls, despite some vote without this knowledge. This is why the knowledge that one has previous to voting or

coming to a decision is vital to making choices about topics like climate change. As the media is a channel for communicating, it can petition for certain climate beliefs to be the voice of the majority. This accompanies the push for influencing one to certain climate change causation beliefs. Media's portrayal of climate change often is split by political identification of causation. News outlets that favor either side of the political aisle promote information in the climate change articles that favors those thoughts. They could leave out information but still state correct facts that are truthful.

The data that will be used is from the 2016 American National Election Survey. This is the appropriate data due to having a variable to help explain and test the theory due to its availability of variables regarding climate change and media consumption available. These variables are analyzed by calculating their linear regressions, along with frequencies. This project will help answer the research question on whether media consumption has an effect on individual's climate change causation beliefs. By examining the amount of media consumed from online media, specifically online news outlets, it can provide an insight to what drives people to change or stick with their beliefs. In this project, it is hypothesized that people who consume more media will have climate change beliefs in alignment with human causes. Next, the second hypothesis is that those who get their media from online sites would be more inclined to human causation rather than natural causation of climate change. The third and final hypothesis is that partisanship in the media can affect via the sites that individual's get their news from, in return influencing the information the audience is consuming and changing their climate beliefs based on what is reported. In this project, media consumption will be put to the test if it affects people's climate change beliefs, as well as testing the given hypotheses.

Literature Review

The emergence of climate change literature has been slowly growing throughout the recent decades. People are divided over if climate change is caused by natural causes or anthropogenic (human) causes. To define the difference between the two causations, natural causes are those that naturally occur to heat up the Earth's climate and naturally increase greenhouse gases, and anthropogenic causes are those that are humanly caused like man made pollution and increase the rate of the greenhouse effect (EPA 2021). An example of a natural cause is changes in the sun's energy or volcanic eruptions (EPA 2021). Additionally, an example of a human cause is increase of carbon dioxide and greenhouse gases like car pollution (EPA 2021). People's beliefs dictate which side of this ongoing argument they are on. Gallup environmental polls have been producing data about the US population's outlook on climate change. The poll results discuss multiple considerations about the issue of climate change, including attitudes toward global warming, outlook on when the effects of global warming will occur, effects of climate change that have already begun, beliefs that it poses a serious threat within the respondents lifetime, and causation due to human activities (Saad 2021). These are key factors to the results of the poll. When looking further into causation due to human activities there is a trend that democrats are increasing in believing that climate change is caused by human activities while republicans are declining in believing that statement (Saad 2021). From the year 2003 until 2021, there was a jump from 68% to 88% of democrats believing that climate change is caused by human activities (Saad 2021).

Climate change media has been evolving throughout the years. People have been consuming information about it through the media. An important theory to keep in mind is Zeller's Receive-Accept-Sample Model (Zaller 1992). There are 3 aspects of the model. First,

reception entails that a person must receive a political message (Zaller 1992). They must not only receive the message, but also they should be able to comprehend the message (Zaller 1992). This is their only way for them to be affected by the message. Next, they must accept the message. When this occurs, they must accept the content of the message in order for persuasion to happen (Zaller 1992). Lastly, sampling is the final stage. When others are asked about the topic and the content of the message that was absorbed, they will have more considerations when they state their opinion about it (Zaller 1992). So, if this model is used to think about climate change media and its effects on the audience consuming it, it can be used to think about how they are absorbing the information produced. Those who believe in climate change and what is being reported will be inclined to absorb the information, but those who do not believe in what is reported will not absorb it.

Media is influential when it comes to relaying information in a way that is easy to understand and comprehend. To begin, the basic rhetoric of any media can be influential to how it is consumed. Rhetorics are the way something is written and supported through articles (Crawford, et. al 2019). It can help establish the truth and a foundation for climate change media to grow from (Crawford, et. al 2019). It enables them to produce well informed articles with climate change facts to give their audience a better understanding and truthful information. (Crawford, et. al 2019). This information can produce and alter views. Notably, television has struggled with accurately reporting anthropogenic climate change (Boykoff 2008). Around 69 to 70 percent of the network news is considered balanced (Boykoff 2008). This means that media outlets balance what is reported on both viewpoints. That still leaves room for possible inaccuracies in climate change reporting. In return, it impacts those consuming the news and policies written that are fueled by the news (Boykoff 2008). Commenting on how climate

change is presented in the media is vital to know how people are currently affected and viewing the media. This foundation provides an insight where the media is lacking and is successful.

Also, news outlets cater their climate news to their political affiliations (McMeekin 2020). McMeekin's study tested if their political affiliation floods into climate news they report (2020). There is a responsibility that is put on journalists and news outlets for them to produce information of only the facts (McMeekin 2020). If the information and facts reported are swayed towards an affiliation closest to the news outlet, the people who consume are getting biased facts and they do not question because of the trust they have for the news (McMeekin 2020). McMeekin finds that CNN and MSNBC have left learning affiliations, which makes them produce more climate news than Fox News (2020). Fox News' right leaning affiliations makes climate news not a priority and tends to make mockery of the subject (McMeekin 2020). This trend implies that audiences of either source favors the affiliation and strengths their beliefs by producing news that supports them.

Whether it be articles regarding the evolution of climate change beliefs, how the government finds solutions for the issue, or even what affects a person's beliefs of the causes of climate change, climate change has appeared in the media stream in multiple occurrences. The environment and climate change is portrayed in different media outlets that incorporate them with the left or democratic agenda (Bolsen, Druckman, & Cook 2015). This is more than a left or right sided issue. Climate change incorporates the entire world due to its impact on the planet. While it is not portrayed as a global issue that is affecting everybody, it seems to only be led by specific entities (Parker & Karlsson 2010). Leaders of climate change help with informing and pushing others to be proactive about the subject (Parker & Karlsson 2010). By learning how to better equip the media to impact countries who are not leaders in this issue or could get this issue

to be important to them, it can bring awareness to climate change around the world (Parker & Karlsson 2010). Additionally, if media consumption aids the development of climate change awareness, it can provide an outlook to how media can be centered around information and educating others. Media consumption has been studied by researchers for quite some time. Television's popularity broke into the living room of families across the country. It re-envisioned how people gain their information or current events. They no longer had to wait or go out to get a newspaper or magazine. All they had to do was flip a switch to tune into the news. Its convenience gave way to the 24 hour news cycle and special program for topics of interest.

Nevertheless, the Internet has been the hub for online news and information for the past two decades. The birth of Google redefined how people seek information. No longer does someone crack open the dictionary or encyclopedia, nor do they run down to the library to search for a book about what they are looking for. They now ask their questions on the Google search engine. It loads hundreds of answers to the page and they are now at the tips of one's fingers. News outlets made websites to publish their articles on in addition to their paper publications. Furthermore, it is more convenient than a paper edition that is produced daily, weekly, or monthly. People can continue to be updated about an issue and stay current on the topic by just hopping on their browser or smartphone app to search for the latest update. Now, the trend of social media and platforms seems to be replacing the Internet web pages and sites. Many large media outlets like CNN, ABC, Fox News, and more have Twitter, Facebook, and Instagram that allows them to send out a headline to grab the attention of others. Individuals who want to show others this news or information can share it to others by reposting it on social media accounts. This creates a ripple effect of communication across the public. The question is whether or not climate change news in the media can effectively influence others. This can be examined through

the lens of different theories of media effects to get a history and better understanding of the best explanatory influence.

Agenda Setting

First, agenda setting allows for news outlets to pick and choose which stories are reported on the news. The term, agenda setting, refers to the idea that media can influence these stories and how important the topics presented are to the audience (McCombs & Valenzuela 2007). Stories get picked to be reported based on what will draw the most attention from the public. Gatekeepers are those picking which content will be aired. Additionally, this could be the only outlet they get their news from, so the effect is then monopolized. Iyengar and Kinder discuss their research regarding agenda setting and its media effects on the American political system (1987). The studies they are observing shows the potential power that television could have under real life circumstances (Iyengar & Kinder 1987). It is designed to fall within the normal range of the television's news (Iyengar & Kinder 1987). Iyengar and Kinder relay "Television news may provide citizens with the convenient escape from this predicament" (Iyengar & Kinder 1987, 16). The predicament that they are escaping from is the ongoing political environment that continues to complicate itself to where the ordinary person can not understand it (Iyengar & Kinder 1987). Television can influence their sense of reality and their thoughts. It is a way to understand what is happening in an easy to understand way to make them feel knowledgeable and informed about important issues.

Continually, agenda setting comes into play when they highlight certain problems and issues but ignoring others. It sets the stage for shaping the views of the audience, most importantly, the American public's political priorities (Iyengar & Kinder 1987). Personal

characteristics can make the individual more affected by agenda setting too. Though the results vary experiment to experiment, these personal characteristics can be indicators for an individual being more or less susceptible to the news coverage watched (Iyengar & Kinder 1987). An example of this result would be in Iyengar and Kinder's experiment 5 and experiment 9. Experiment 5 tested how people absorb news coverage in both extensive and moderate attention conditions. Participants were assigned to either conditions to view news about one of the conditions on one of the following issues; unemployment, civil rights, and social security (Iyengar & Kinder 1987). The coverage of unemployment was more powerful for those who were unemployed, coverage of racial discriminattion was more powerful among blacks, and coverage about social security was more powerful to those who are elderly (Iyengar & Kinder 1987). Conversely, the results of experiment 9 were quite different in some categories. Unemployment was more powerful among those employed (Iyengar & Kinder 1987). This can be seen as a limitation of the personal predicaments discussed because results can vary per issue experiment to experiment (Iyengar & Kinder 1987).

Furthermore, a topic that is frequently reported via agenda setting and is an example for understanding its reach is mass shootings. Typical mass shootings that are studied are school related. Schildkraut and Muschert conducted a study about how the Sandy Hook shooting changed the discourse in how school violence is reported (2014). The original model was set by the Columbine shooting which is known as the first infamous school mass shooting in 1999 (Schildkraut & Muschert 2014). The study suggests that these stories get the attention of the public because of the unresolved issue of continuous school shootings (Schildkraut & Muschert 2014). The unresolved issues come back to the minds of the people who saw the previous school shootings. Previous talks about gun control, proposed legislation, and school safety flush back to

their minds and they are reminded of what has not been done to resolve this issue. The change of how the agenda is set was revolutionary. It no longer focused on the shooters and their reasoning, but on the victims and how the loss of the victims will affect society as a whole. .

Additionally, other studies have been conducted about the Sandy Hook shooting in regards to agenda setting and media influence. For example, Jashinsky, Magnusson, Hanson, and Barnes conducted a study about the media's response to the shooting and its prominence (2016). After the event occured, it is found that the media focused on holding the government and lawmakers responsible rather than the individuals involved (Jashinsky et al. 2016). This is quite different from Schildkraut and Muschert's idea of the focus being set on the victims (2014). But, this can still be possible through the agenda that was set in a way to focus on the victims and the solution was then communicated through holding the government responsible (Schildkraut & Muschert 2014; Jashinsky et al. 2016). Continually, this response resulted in more sensible legislation regarding guns and mass shootings (Jashinsky et al. 2016). These shootings reflect agenda setting in climate change media in its bare concept. While not a lot is known about climate change in the media, there is about violence in the media. By mirroring the effects from shootings in the media, it can be predicted and hypothesized what can happen for attention to be drawn and climate change to become a current topic in the news.

Nevertheless, agenda setting does reflect the climate change media. Environmental media is already pushed to the back burner, so when it is reported, it needs to stand out and make its mark on the audience (Pralle 2009). Pralle suggests some strategies to implement when climate change is discussed in the media to get it out on the forefront more often (2009). While it is not known which of these strategies would be the most effective, it is noted that this plethora of solutions can be applied to best fit the situation being produced. Every environmental situation is

different and unique to itself. A strategy to help with the consumption of climate change media in understanding how it helps get across beliefs and environmental knowledge (Crawford, Breheny, Mansvelt, & Hill 2019). Notably, what is happening in one part of the world indirectly affects the other part. Whether it be natural disasters (hurricanes, earthquakes, etc.), human disasters (oil spills, air pollution, etc.), or even the natural effects of the environment, it can influence how society views the urgency of climate change. Effective agenda setting can be pursued through embodying these useful tactics in the stories that are set. When it is successful, it accounts for the effects that result from the information stated in those stories.

In addition, there are some failures and successes of climate change awareness to point the media in the right direction. There is an ongoing history of how the media portrays climate change. Nisbet explains about how the history of the success and failure of climate change awareness help in understanding the public beliefs, as well as how to persuade them (2009). While the study does not have the traditional statistical data, it uses previous media of climate change to investigate if they are positioned with accompanied outcomes and success rates (Nisbet 2009). This is a notably different result from the average studies on climate change in the media, and it should be noted for this very reason as an anomaly. Therefore, how the agenda is set does impact the success of the knowledge being consumed and attained by the public audience. By knowing what type of communication impacts the audience more, it can lead to better ways of promotion and involvement of media on an educational level. Successful communication is at the heart of agenda setting. This study shows how to share the information successfully, so that the media being consumed is having a positive impact on the audience. While the impact did not define how to specifically persuade others about climate change, it does point to how agenda setting can be effectively used to persuade and promote information so

people can make those choices about causation of climate change. In theory, media that is portraying successful media agenda setting tactics can in return influence all those who consume this climate change media. It hopefully will leave its mark on the audience who will then take into consideration their values and beliefs and adjust them accordingly. In addition to influencing the public, it can also influence the key decision makers. They are the ones who propose legislation pertaining to climate change, as well as vote on legislation. These people are affected the same way that a normal audience member would be, but the only difference is they yield a stronger power. Agenda setting provides a way to set up information to be absorbed, but it can provide a much needed persuasive nature when done correctly can result in an influenced belief system stemming from facts and values.

Cultivation Theory

George Gerbner's cultivation theory was proposed in the 1960s. This was in the beginning of the boom of television across the world. Cultivation theory is the theory that individuals who watch television programming more often than others or those who have a high viewing rate will be more susceptible to the messages from the television and in return believe them to be the truth (Gerbner 1998). To clarify, these individuals would show an influence through their beliefs and values over time. Cultivation theory in a broader sense would imply that these studies began looking at how people view violence on television. For example, if an individual was to watch television consistently regarding crime whether it be crime news, drama crime shows, true crime shows, or even investigative crime shows, they could possibly think

there is a higher crime rate due to consuming a high rate of media regarding crime (Dowler & Zawilski 2007). While this does not directly relate to climate change coverage in the media, it still creates a parallel to the original aspects of cultivation theory.

Crime is a common theme in cultivation theory studies. Dowler and Zawliski studied if there was a relationship between the media consumption and people's beliefs about police misconduct and discrimination through a phone survey (2007). In this study, they tested how much media they consumed with their attitudes towards police and discriminatory police practices (Dowler & Zawilski 2007). Results showed that while network news does not have an impact on police misconduct and discrimination beliefs, it did have a little impact on beliefs on those who watched (Dowler & Zawilski 2007). It is theorized that those who are heavy consumers are more aware of the effects and measure for them in return (Dowler & Zawilski 2007). Therefore, it could mean that people could be measuring for the effect of their heavy media consumption in all issues that are reported on media platforms.

Climate change issues being reported online can have a similar influence on people's causation beliefs. If these people are influenced due to the amount of media reporting on environmental issues consumed, the content that the media is reporting could sway them in the direction the report says. Environmental issues in media can be swayed by the audience's overall effects on the media that has been consumed. This topic is something that has outside influences of people who are specifically involved and active in environmental studies. Materialism comes into the picture as an explanation of the relationship between television consumption and not being concerned about the environment (Good 2007). Good's study incorporated how mediation of materialism responds to the attitudes about the environment in relation to television viewing (2007). The study began with the question what does the lack of environmental television do to

those who consume it (Good 2007). Television is flooded with the material thoughts and consumption that is lingering in both advertisements and the programming (Good 2007). Consuming the materialistic information can rule the fueling wasteful and materialistic lives that people have created (Good 2007). The results of Good's study suggest that while heavily viewing television with the underlying materialism messages and those messages impact what they believe (2007). Good suggests that we need to think "...heavy television viewing as not just personally problematic but also problematic for the planet" (2007, 378). In another study, Good conducts she studies how television viewing affects environmentalists versus the general public (2009). This group of people who call themselves environmentalists are shown to have attitudes about the environment that reflect what they are watching on television in addition to their cognitive processing of what is viewed (Good 2009). Despite the knowledge that environmentalists have and their choices to consume environmental driven programming, they are still being affected by it (Good 2009). The specific knowledge that is known by individuals positively correlates a relationship with climate change beliefs (Guy, Kashima, Walker, & O'Neill 2014).

However, heavy media consumption can have various effects on people's perception and beliefs. The Black Lives Matter (BLM) movement is a recent issue that has moved into the limelight of the news media. The movement gained momentum as the initial exposure to the issue grew to a national crisis. Since this is a more recent topic, Kilgo and Mourao studied how the BLM movement in the media affects how people's media consumption and pre-existing attitudes towards the topic are influenced (2019). Their results suggest that due to pre-existing ideas that increased media consumption did not create more agreement or disagreement with the BLM movement ideas (Kilgo & Mourao 2019). Moreover, the increased media consumption of

individuals in conservative media led to negative evaluations of BLM ideas and vice versa with other partisan ideas (Kilgo & Mourao 2019). It is important to note that increased media consumption of individuals in liberal media did not have increased support for BLM ideas (Kilgo & Mourao 2019). While these pre-existing attitudes seem to stay strong against media consumption, it reminds that these pre-existing beliefs or experiences heavily consuming media could have an effect on individuals. Dowler and Zawilski (2007) states that people could be aware of the effects and impacts heavily consumed media does to them, but when that is coupled with Kilgo and Mourao (2019) study, it points out how partisan beliefs could provide a barrier from the influence of media. This is where cultivation theory has evolved from the traditional standpoint of what Gerbner described to what is known in today's studies. Nevertheless, in Ray and Kort-Butler's study on media consumption's relation with attitudes towards crime, it suggests that two-thirds of their study believed that the crime rate was increasing (2020). While the majority of the study did have the results of cultivation theory hypothesized, it is noted that these results generalize how the public reflects the influence of media consumption. This crime based study can be applied to climate change through hypothesizing that a majority of people will have results similar when observing climate change media whether it be news or television programming. In addition, the narrowing of media types into a few categories further explains how specific media genre consumption influences their beliefs, but all in all suggests that traditional media has a heavier influence than internet media in deferring beliefs (Ray & Kort-Butler 2020). Heavier influence in traditional media can be explained by the idea of fewer choices available at the certain time one has to watch media. Internet media allows people the freedom of choosing what media outlet they want to consume their media from and at what time

which suggests due to its flexibility influences less because people continue to watch what conforms to their existing views and values.

Climate change media, according to Ray and Kort-Butler's results, would be more influential on traditional media than internet media due to the idea that one who normally would not consume this type of media would consume it due to having limited options (2020). Further, the Internet has become the platform to get information from. News outlets have moved from traditional media of television, newspapers, and radios to internet websites. Recent cultivation theory studies have shed light on this new platform of information. Internet media consumption differs from traditional media consumption due to its relationship with people's attitudes. From Roche, Pickett and Gertz's study, they present the results saying that compared to traditional media, internet news consumption did not relate and had negative effects on the anxieties about crime and the support towards crime policies (2016). As was stated previously, internet media did not have the strong influence of beliefs that traditional media had on people (Ray & Kort-Butler, 2020). The study said age had no relation to attitudes from the information attained. This is noted due to the generational divide that advancing technology has created among those who were alive before versus after the technology creation and advancements. However, there was a negative result about the death penalty in relation with the age of the individual (Roche, Pickettt, & Gertz 2016).

A key part of internet news media is social media. News outlets now have social media accounts on Facebook, Twitter, Instagram, and even Snapchat. They utilize these platforms as a way to get the topic or the byline of their article out there so people are interested in what they have to say. Additionally, they add links to their articles in their social media posts for people to click on. These hyperlink directly to the news outlet's website. Social media allows for people to

access the news whenever they want, as well as choose which news outlets they want to consume from. While this is the same for internet news altogether, people can follow which they want and be updated via their personalized feeds. They do not even have to search for the recent posts because they just appear. The availability could create a strong support for cultivation theory. Intravia, Wolff, and Paez's study discusses how social media relates to cultivation theory through crime based media (2017). The study proves that there is significant support that social media influences individuals' fear of crime (Intravia, Wolff, & Paez 2017). This goes above and beyond the measures of other media sources. It should be noted that the individuals in the study might be affected by their characteristics and backgrounds (Intravia, Wolff, & Paez 2017). For example, if they already live in a high crime-rate area, they might be affected by these demographics rather than their social media consumption habits. This study is a foundation for how a form of non-traditional media can be applied to cultivation theory. Similarly, in this study, the current research can gain from this by creating a foundation for the study and help with hypothesizing what will happen in the results.

H1: People who consume more media will have climate change beliefs in alignment with human causation.

H2: Those who get their media from online sites would be more inclined to believe in human causation rather than natural causation of climate change.

Partisanship in the Media

While agenda setting and cultivation theory can help prove how media affects people's beliefs, partisanship can influence those beliefs before watching the news. Partisanship in the media is when the political values a news outlet holds and favors in their production of articles or

segments. This makes choosing an angle to tell the story not about the facts and what information is available, but it is about spinning the story in a way that tells only certain facts but in a light that favors the partisan beliefs of the media outlet. This display of partisan values could influence those consuming the news. In addition, people with similar partisanship could more than likely tune into news that share similar beliefs. With the easy accessibility of news platforms, people can cater their values to which news outlets they watch. This can limit their exposure to different partisan beliefs and values. Different media platforms can exhibit different partisan idealizations of climate change news. Partisanship can also be applied as a lens to filter what is consumed through cultivation theory. What people's partisan is and the news they consume, it is filtered against beliefs that object the values of their partisan. This logical explanation is key when thinking about what is remembered from media programs about climate change. People will only hear what they want to hear. Therefore, the facts reported might not all be taken for the truth and consumed by the public. Facts could be thrown out based on it being different from dedicated beliefs.

Carmichael, Brulee, and Huxster studied how the media's role in informing the public drives a partisan divide in public's concern over climate change (2017). Both democrats and republicans have different support of influenced beliefs based on the media outlet and media type (Carmichael, Brulee, & Huxster 2017). For example, it proves that network television does not influence democrats, with the exception of PBS, but republicans are influenced by it (Carmichael, Brulee, & Huxster 2017). This shows the dominant and growing divide about climate change in both political parties. Another example of the results would be how cable television does not influence republicans and democrats (Carmichael, Brulee, & Huxster 2017). One exception in republicans is them being influenced by comedy news and responding

positively to CNN (Carmichael, Brulee, & Huxster 2017). As it can be seen, each political party has a different reaction to different media forms. Partisan selective exposure can explain parts of these results. This is where people only consume media that matches up with partisan beliefs and values that are similar. The only part where partisan selective exposure cannot explain the outcomes is when CNN gives a positive outcome to republicans. CNN is a generally liberal news outlet which is why it is so unlikely that republicans would have such a positive influence from it (Carmichael, Brulee, & Huxster 2017). Other than this type of instance, partisan selective exposure is a good theory for why partisanship is so influential to all it accompasses.

Additionally, climate change beliefs have evolved in the media that both what Democrats and Republicans consume, in addition to help understand partisanship's effects in depth. To begin, think about the questions posed in climate change surveys. Usually a question on these surveys asks for their party identification. This allows for surveys to differentiate between political affiliations of all the participants. Importantly, the usage of terms in global warming and climate change could have effects on perceptions and thoughts of individuals regarding the subject. Schuldt, Roh, and Schwarz studied how these different wordings affect public opinion (2015). Their findings concluded that the wording of "global warming" compared to "climate change" is apparent in more of a skeptical position on the climate change issues (Schuldt, Roh, & Schwarz 2015). They also proved that this effect is more pronounced in groups who are typically more skeptical of climate change (Schuldt, Roh, & Schwarz 2015). A group that is more skeptical of climate change is conservatives. When partisanship is controlled for in studies, it is weeded out as a cause. Therefore, when it is controlled for in climate change studies, there is a way partisanship can be tested individually to see if party affiliation has an impact on the research question. Wording does affect more than just surveys. It can be translated into other

wordings that are incorporated in news articles, programs, informational writings, and posts on social platforms. These are things to be aware of when discussing climate change in all these media outlets. Further, emotions can play a role in how partisanships are influenced by the news. Online partisan news can bring out negative emotions to arouse their audiences (Hasell & Weeks 2016). These news sources each spark emotions within. Hassel and Weeks state that the emotion driving these types of response is anger (2016). Anxiety was not indicated in the study as a result of emotions (Hassel and Weeks 2016). This correlates to how people can view information in the media. What climate change media can do is emotionally affect those. For example, if an online news platform is reporting on a presidential candidate that is of the opposite party affiliation as the person consuming it, it could create an anger within and stir up those negative emotions towards the said presidential candidate. Partisanship's ties to the emotional appeal of the audience can persuade their views based on their values. In terms of climate change news and influencing beliefs about causation, stories using emotional appeal like in human stories or seeing the effect it has on real life can pull on those heart strings to motivate them to change their core beliefs. A human story like an interview of a victim of a natural disaster, like a victim of Hurricane Katrina, could bring those feelings to the surface and affect those beliefs due to its strong emotional appeal.

Partisanship can spread further than what one hears from the media themselves. It can spread further and farther to those who hear about it from others via person-to-person communication. Druckman, Levendusky, and McLain created a study about how interpersonal discussions can spread partisan media and their effects (2018). The results are more than showing that the news outlets that correlate themselves with a partisanship can be consumed by those who watch (Druckman, Levendusky, & McLain 2018) . The two-step effect of partisanship

shows that those who consume it can spread the information further to an audience who normally would not come in contact with it. This helps by knowing what exactly to look for when controlling for partisanships. Partisanship might not take into account all the ways it spreads to others. The realization that one can not control for all of the partisanship one is exposed to but it brings awareness in the study. However, it is important to note that partisanship in media does not rely on just people only consuming media with similar party affiliation. In a study conducted by Nelson and Webster, they observed how online audience behaviors present a portrait of an actual online political news audience (2017). What this means for what partisan news sites liberals and conservatives consume is that the results suggest that both partisanships visit similar news outlets, but those results vary based on news outlets (Nelson & Webster 2017). The limit within their research was that selective exposure does occur in online news (Nelson & Webster 2017). This could account for the flexibility and freedom of choosing which news outlets they follow or what news website they search for, as stated previously. The difference in partisanship in traditional media versus online media can be accounted for through examining how they get to the news. Paths taken to get to their news can be through posts shared by others on social media platforms to advertisements promoting the article or news segment. There are many ways partisanship is portrayed in the media, but the greatest challenge is removing it from the question to see if it eliminates possible causes.

H3: Partisanship in the media can affect via the sites that individual's get their news from, in return influencing the information the audience is consuming and changing their climate beliefs based on what is reported.

Methodology

In order to test how media consumption affects climate change causation beliefs, the 2016 American National Election Survey was used. It provided the best data for each variable dependent on what questions were asked in the survey, as well as what information was available. This data set was a good one to use due to the questions that were asked being aligned with media consumption variables that needed to be tested for a relationship between the independent and dependent variables. Linear regression allows for the ability to test the relationship between all the variables in each test, as well as their individual effects of each variable tested. This is an appropriate analyzing technique due to it can seek a relationship between the independent variables presented with the dependent variable and control variables.

The independent variables for this study consist of how many days out of the week people consumes media, how many days out of the week one consumed social media to learn about the presidential election and how many people learned about the presidential election through internet sites, chat rooms, or blogs, and online news sites of CNN, Fox News, the New York Times, and Daily Mail. Each independent variable was chosen based on how it can help answer the research question asked, along with operationalizing variables in the hypotheses. How many days out of the week people consume media allows the initial research question about if media consumption affects climate change causation beliefs to be tested at the basic level. The number of days in a week one consumes social media to learn about the presidential election measures if people gather and consume information from these types of sources. Also, the variable of how many people learned about the presidential election through internet sites, chat rooms, or blogs provides an insight of how these platforms can impact the information consumed. People can view online news content consumption in relation to its effect on climate

change causation beliefs through this lens to view where they get their information from. While these variables are specific to presidential elections, it still gives an overview of how people are getting their information online for presidential elections, as well as all their news topics like climate change or current events. Next, online news sites, specifically CNN, Fox News, the New York Times, and Daily Mail, are valuable variables to see how news sites with partisan values are viewed by people and whether one news site has a significant relationship with climate change causation beliefs. Due to news sites holding values of different sides of the partisanship spectrum, it is valuable to look in depth at how individual sites reflect with different beliefs of climate change causation (Carmichael, Brulee, & Huxster 2017).

Nevertheless, the control variables are partisanship, education attainment, and age measurement to account for possible outside influences. Partisanship is needed to control for possible influences of values that could impact how media could influence climate change causation. It is measured on a scale of 1, 2, and 3 where 1 indicates democrat, 2 indicates republican, and 3 indicates none or independent. Education attainment is a control due to how the media can influence people at different educational levels. The education levels are on a scale from 1 to 16, where 1 indicates less than first grade education and 16 indicates a doctorate level of education. Controlling for age is critical due to the technology gap age generations having different abilities due to vast or limited knowledge. An example is that those who are older and have limited technology knowledge could result in getting their news less from the media. Age was recorded independently from respondent to respondent.

Additionally, The dependent variable is anthropogenic climate change causation beliefs which is a measurement of how climate change is caused either by human (1), natural (3), or combination of both (2) on a scale of 1 to 3. Since the research question wants to find out the

effect each independent variable has on climate change causation beliefs, this is a straight question to ask people what type of causation they believe and provides a representation of what belief each individual has. The anthropogenic climate change dependent variable needed to be recoded into different terms to make the study simpler to study. It was recoded to move around the values to make it easier to compute the data with human causes coded as 1, both causes coded as 2, and natural causes coded as 3. Next, frequencies were run for each of the variables including dependent variable, independent variables, and control variables. This shows the results of the responses on the survey of each question asked. By knowing how many respondents replied to each response given, it helps indicate what the majority of the individuals respond to and what the minority is.

Lastly, linear regressions were used to look at the relationship between each variable. Linear regression allows for relationships between the independent and dependent variables to be tested for a significance between them. A total of 4 linear regressions were run in multiple groups to separate the possible relationships and influences of the independent variables to the dependent variable. The dependent variable of anthropogenic climate change with the support of the controls, age, education attainment, and partisanship were used in all of the linear regressions. This was the most appropriate line of measure because it can detect whether or not there is a significant relationship between the variables. Additionally, it allows for comparison of the R-squared values to check to see if one relationship can account for more than another relationship.

In the first linear regression, the independent variable of how many days a week does one consume any type of media, excluding sports media. It excluded sports media in the survey question. This variable helps answer the research question by introducing the amount people

consume media to see if there is a relationship with the climate change beliefs of people. The second linear regression was with the independent variables; the number of days within the week one used social media to learn about the presidential election and the amount of people who had heard anything about the presidential campaign from internet sites, chat rooms, or blogs. This independent variable is targeted towards presidential election information, but it still shows if they get their information from the sites the variables are measuring for. Next, the third linear regression used the independent variables of different online news websites and if someone regularly checks them at least once a month. The website variables being used are CNN, Fox News, the New York Times, and Daily News. Sites chosen provide a variety of partisan alignments to demonstrate how each alignment has a relationship with the dependent variables. McMeekin strengths the influence of political affiliations into the facts of news articles is the cause for testing multiple news outlets and their effects on causation beliefs and partisanship (2020). The last linear regression used was a combination of all the independent variables used with the dependent variable and controls.

Media consumption in the project has many forms in the variables used. Reliability of these media consumption variables leads to the ability to replicate the study done under the same conditions which is available and possible. The 2016 ANES data set is available to those who open an account with them. The answers of the 2016 survey, and their results are not changing, further identifying the reliability of the variables. Additionally, validity is important because it backs up that they are measuring what they are supposed to measure. The results from this project backs up other studies done previously by further supporting the media's influence on beliefs. In particular, partisanship in the media is backed up through this project. The news outlet

had an outlook that favored and supported partisanship and influenced beliefs through their reach to a public audience.

Analysis

The frequencies tables below describe results of which respondents chose which answers provided. This gives a better understanding of what the majority of respondents agreed to. In Table 1, it describes the frequency of the dependent variable of anthropogenic climate change causation. The specific question asked for anthropogenic climate change variable was: Assuming it's happening, do you think a rise in the world's temperatures would be caused mostly by human activity, mostly by natural causes, or about equally by human activity and by natural causes? Majority of the respondents believe that climate change is caused by both human and natural causes. Closely following behind was human climate change causation. It is also noted that there are respondents that don't know or refuse to answer the question about anthropogenic climate change on the survey. Only 1.3% of respondents did not answer the question. This helps explain people who might not believe in climate change and wanted to not answer the question due to that fact. Continually, knowing which one people believe in more can help get a sense of what the entire society believes in as well. Table 2 is a frequency table of the independent variable of how many days a week the respondent watches, listens, or reads the news on any media. The majority of respondents say they consume news 7 days a week. This helps get an idea of just how much media is consumed on a daily basis not only for these respondents, but also for the public in general. Consuming media every day of the week means consuming lots of information about topics important to society and current events. If the majority consumes this media, it means that people are absorbing information similarly on a daily basis.

Table 1: Anthropogenic Climate Change Causation

	Frequency	Valid Percent
Human Causes	1,660	39.2
Combination of Both	1,824	43.1
Natural Causes	751	17.7
Total	4,235	100
Don't know or refused	1.3	1.3

Table 2: Days in the week watch, listen, or read news on any media

Mean	Median
5.53	7.00

Through the analyzing of the variables used, it examined the relationships in order to answer the research questions and test the hypotheses. The table below shows the results of each linear regression that was run. It allows for the convenience of comparing each regression run in comparison to each other's results. Further, the sections below describe each result from the regressions performed, along with their impact towards the research question and hypotheses proposed earlier. The table describes each regression's results providing the unstandardized beta coefficient, p-values, and r squared.

Table 3: Overall Regression Outcomes Coefficients, P-Values, and R Squared

	Model 1	Model 2	Model 3	Model 4
Age	.004 (.000)	.004 (.000)	.003 (.000)	.003 (.000)
Education	-.001 (.398)	-.001 (.447)	-.001 (.715)	.000 (.771)
Partisanship	-.016 (.010)	-.016 (.011)	-.013 (.031)	-.013 (.034)
Days/Week Consume Media	-.008 (.180)			-.003 (.645)
Social Media Consumption		-.005 (.208)		-.004 (.255)
Internet Sites, Chat Rooms, or Blogs		-.018 (.103)		-.012 (.311)
Website: CNN			-.134 (.000)	-.131 (.000)
Website: Fox News			.323 (.000)	.327 (.000)
Website: NY Times			-.347 (.000)	-.343 (.000)
Website: Daily Mail			.128 (.005)	.128 (.006)
R^2	15%	16%	64%	65%

Note: Coefficients used are unstandardized beta coefficients with p-values in parentheses.

Model 1: Amount of Consumed Media

In the first linear regression containing the independent variable of how many days of the week one consumes media, it shows the results from the linear regression predicting if there was a relationship with climate change causation beliefs. Looking at the regression table in the parenthesis portion holding the p-value, the variables of age and partisanship hold significance (p-value is less than 0.05). Further looking into the table can indicate which variables contribute to the significance of the regression model. The number of days in the week one consumes media and education attainment do not hold statistically significant in relation to anthropogenic climate

change causation. The first hypothesis regarding the days a week one consumes media having a positive effect on those who believe in human causation of climate change did not hold a significant relationship according to the p-value, but did show relation to an increase in how many days media is consumed with those who believe in human causation. It appears to be approaching significance, but that there is not enough confidence to support the hypothesis yet.

Model 2: Social Media & Internet Sites, Chat Rooms, or Blogs

Next, the second linear regression contained the independent variables of the number of days in week one consumed social media to learn about the presidential election and how many people learned about the presidential election through internet sites, chat rooms, or blogs. The regression table results have a p-value of 0.00 which is less than the 0.05 threshold value making the relationship statistically significant. The relationships that have significance with p-values less than 0.05 would be partisanship and age. This is not the case for significance in education attainment, the number of days in week one consumed social media to learn about the presidential election and how many people learned about the presidential election through internet sites, chat rooms, or blogs in relation to anthropogenic climate change causation. Continually, the second hypothesis was in regards to online news sites as a source of information and those who consume them will believe human causation. The p-value suggests that the relationship is insignificant with values greater than 0.05. Their unstandardized beta coefficients states the greater the number of days consuming the social media and the larger mention of internet sites, chat rooms, or blogs then the closer to human causation their beliefs are.

Model 3: Online News Outlets

Furthermore, the third linear regression contained the independent variables of different online news websites including CNN, Fox News, the New York Times, and Daily Mail with the same controls and the dependent variable as the previous linear regressions. There were several variables with significant results that impacted the results of this regression. The regression table showed a significant relationship between the individual online news sites and climate change causation with a p-value of 0.00, less than the 0.05 threshold. While previous linear regressions had multiple variables that had no significance in the regression table, this regression only had one, education attainment. This means that only education had no relationship with climate change causation. There was a slight indication that the higher the education variable was, it would then align more with human causation. The remaining independent variables and controls were all statistically significant with p-values less than 0.05. The independent variables all had p-values of 0.00. Despite the controlling for partisanship, both Fox News and CNN push people to believe that it is natural or human causes. This also applies to the New York Times and Daily Mail. From these significant variables, it indicates that despite controls there was still a significant relationship between the news outlets affecting climate change causation beliefs. Furthermore, the third and final hypothesis reports that different online news sites can influence their audiences to favor partisan climate beliefs that align with their values and has significant p-values for each news outlet that was tested. Unstandardized beta coefficients provide insight to how each site relates to their climate change causation beliefs. CNN and New York Times showed that those who consumed these news sites were more likely to believe in human causes to climate change. Again, these are news outlets that have a left-leaning value system. Fox News and Daily Mail showed that those who consumed these news sites were more likely to believe in

natural causes to climate change. This could be due to their right leaning value system of reporting.

Model 4: All Independent Variables

Lastly, the fourth and final linear regression contained all the previous independent variables, controls, and the dependent variable. The regression table states the p-value is 0.00 for this regression leading to believe it is a statistically significant relationship. The Coefficients table imply the independent variables and controls with no significance of relationship would be education attainment, amount of days out of the week people consume media, the amount of days in week people use social media to learn about presidential election, and whether people learn about the presidential election from internet sites, chat rooms, or blogs with p-value of greater than 0.05. The remaining variables including age, partisanship, CNN, Fox News, New York Times, and Daily Mail have statistically significant p-values of less than 0.05.

From the data presented, it can be concluded that cultivation theory provides a better understanding of how consuming media can affect beliefs, specifically climate change beliefs. Internet media has led to people getting their news from there. Literature has focused more on the traditional media rather than this new form of media. This project has led more towards the internet media, which has given a new perspective that Ray and Kort-Butler's study did not. While they suggest that internet media did not have any strong influence on individual's beliefs, this study gives a new outlook where specific, individual online news sites have a significant relationship with these climate change causation beliefs. Partisanship in the media does have a significant impact on climate beliefs which supports Carmichael, Brulee, and Huxster theory that news sites that have these partisan beliefs (CNN or Fox News) creates a gap in what people

consume and influences them to think and believe in their mindset (2017). Agenda setting was not specifically thought nor tested in this project, it is crucial to imply that variables for specific news stories or topics were unavailable. Seeing what specific articles each of these people read, specifically in accordance with climate change could give a broader understanding of how media affects climate change causation beliefs. This project fills the gaps about media consumption's involvement with beliefs in a specific circumstance of climate change and online media settings.

Conclusion

The findings of the project illuminate the ongoing effects that media consumption has on different beliefs. Overall, the research question of if media consumption has an effect on climate change belief was examined with the results suggesting that there is an effect when individuals consume media in regards to climate change. The significant relationship between climate change causation beliefs and online news consumption occurred in those individual online news sites tested. They all had p-values of less than 0.05. In addition, their coefficients confirmed hypothesis 3 about partisan beliefs in media can influence beliefs to side with their values. The left leaning news outlets, CNN and the New York Times, audience leaned towards more human causation climate beliefs in comparison to the right leaning news outlets, Fox News and Daily Mail. However, the second hypothesis suggested that those who get their media from online sites would be more inclined to human causation rather than natural causation of climate change but the results of the linear regression about getting information from social media and internet sites, chat rooms, or blogs did not have a significant statistical p-value, but their unstandardized beta coefficient did show that those who got their information from those sites did trend to have more beliefs towards human causation. Unfortunately, the first hypothesis made did not have significant support of the p-value and unstandardized beta coefficient is only -.008, which is not as impactful. Large media consumption did not seem to have a relationship with individuals having human causation climate beliefs.

Furthermore, these conclusions give insight into how media consumption can help influence beliefs. Influencing can help people to gain valuable information about climate change and to sway people to either side of the issue, depending on where they get their information from. Partisanship can define the side of climate change or other topics. News outlets with

similar values to partisans favor either the left or right side of the political aisle. Their beliefs and values spill into the information that is used and the way the news presents each topic. Each online news site tested for a relationship with climate change causation beliefs was significant. Therefore, partisanship is a key influence in media and individual's beliefs. By knowing how and why media influences the way it does, it can show how it can positively affect those who listen to it by informing them about climate change. Better informed society can make informed decisions about climate change that could impact who they vote for or how they see the issue. It can help govern society better by knowing how media can affect them and how to use the influence of media to inform others about climate change. The ability to look further into how people consume information about climate change allows for news outlets and society itself to adjust its approach, so it is beneficial to others. That is what is learned from this project that can be beneficial for future purposes.

Despite the concluding evidence supporting some of the hypotheses made, there are a few limitations to the project. First, social media use is not accounted for in this project. Social media is a common way to gather information about topics and is a great influencer of information being reported (Intravia, et. al 2017). It has become almost a new platform online to get news from. News outlets have even gotten social media accounts on every platform available. Not being able to account for how social media affects how individuals get their news makes for a weakness in the theory. Social media accounts for people that you follow sharing articles and information. It is hard to measure this in the data that was collected in the 2016 ANES data. Data that is closely related was used to get a relative near answer to what a social media variable would do.

Another limitation of this study is that it uses the independent variable of who used social media to learn about presidential election information. This variable focuses on where people get presidential election information rather than climate change information. While this still explores the basic principle of where individuals get their information from, it is a way to see the foundation of information. It can be subjective to assume that where they get their information about presidential elections is where they also get their information regarding other topics and issues. Additionally, a better measure of the media consumption variables could be beneficial to better understanding the individual beliefs of news outlets as they influence their audience. Measuring how many days a week a respondent consumes that specific news outlet could give an understanding if large amounts of media consumption for specific outlets has different effects from one another. For example, one news outlet could have a stronger effect on influencing beliefs than another, which could illuminate what they are doing differently from others to be that influential. By knowing how they are more influential towards beliefs, news outlets could adapt to follow what they are doing to begin to create a flux of beliefs for those consuming at different times.

There was also a reliability issue in regards to the anthropogenic climate change question on the survey. The survey question did not give the option for people who do not believe in climate change to choose that option. They were forced to give an answer to what they believe is the cause of climate change. A few people refused to answer or selected don't know as an answer in hopes to reflect their beliefs. This can be a limitation due to the reliability of the variable is not strong due to pushing people to choose a causation.

Future research has many opportunities, such as social media effects on climate change causation beliefs, partisan influence on the media and the information produced, and further

research about specific news outlets' online influence on beliefs. Social media was not able to be tested fully in this project because of lack of data. Focusing on social media's effect on climate change causation can be impactful to understanding how today's society is influenced. With social media being at the center of today's world, it would be best to better understand how and why it can change beliefs and influence change within. Partisan influence is mentioned throughout the project in regards to how news outlets use their values to align themselves with a political side. Information that is in each story produces only facts that align with this partisanship. Knowing more about how it can affect what is written can help in understanding how big of an influence it is. If one knows how to influence this partisanship in writing, climate media can be driven to have a positive impact in partisan media to bring attention to the topic. Further research into specific news outlets' online influence on individuals' beliefs can relay how it can be used to an advantage to accurately influence others on topics, like climate change. A few specific news outlets were tested for a relationship with climate change causation in this project, but this was just a surface look. By looking further into the type of influence different outlets have on influences could give a more in depth understanding of why and how they change people's beliefs. It can help inform people about future topics to be the greatest influence that they have accompanied.

Climate change is an issue that is not being solved anytime soon, but with more awareness and information being delivered to the public, it can be put in the light more often. The goal is to make it on an everyday platform more than just in election season or a debate stage. Understanding how to influence beliefs on others can better equip one for future topics and information that needs to be public too. That is what this project tries to bring to light. Now that it is known media consumption has an effect on climate change causation in some shape or form,

it can be accounted for and people can be aware of it. Media's influence is something that will continue to grow as it evolves with future platforms being developed and expanded on. The foundation has been set to know about climate beliefs reaction to media consumption, and it will now be continually built on

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