Media Coverage of Anthropogenic Climate Change: Analysis of Coverage, Issues, and Implications for Public Engagement and Government Policy

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Abstract

Media coverage of climate change is responsible for shaping both public understanding and government policies regarding the environment. The public relies on the media to translate the oftentimes complex terminology, processes, and implications of environmental research and findings. Unfortunately, miscommunication frequently occurs as the media seek to bridge this knowledge gap, with implications including hostile public sentiment, failure to take necessary action, and ineffective or harmful governmental policies. This thesis will provide an overview of how the media cover climate change, including analyses of both poor and successful coverage of issues, identification of risks and reoccurring problems present in media coverage of environmental issues, and implications for public engagement and government policy.

Media Coverage of Anthropogenic Climate Change: Analysis of Coverage, Issues, and Implications for Public Engagement and Government Policy

The media function as a bridge between experts and society. This is particularly true regarding scientific issues, where the knowledge gap is significantly larger than for other concerns. Media coverage of environmental issues shapes how the public understands and reacts to changes in the world around them. The media possess the ability to draw connections and influence beliefs in a way that scientists do not have. People rely on the media to translate the oftentimes complex terminology, processes, and implications of environmental research and conclusions. This includes lawmakers and governing officials, who also rely on the media for updates and analyses on the climate.

Unfortunately, miscommunication occurs as the media seek to bridge this knowledge gap, with implications including hostile public sentiment, failure of the public and policymakers to take necessary action, and ineffective or harmful government policies. For the media to improve their coverage of climate change, the issues with current coverage must be identified and discussed. This thesis will provide an overview of how the media cover climate change, including analyses of both poor and successful coverage of issues, identification of risks and reoccurring problems present in media coverage of environmental issues, and implications for public awareness, engagement, and government policy.

About Climate Change

Climate change is a term that is frequently misused or misunderstood. This section will provide definitions of specific terms and agencies referenced throughout this thesis, including *climate change*, *anthropogenic climate change*, and the *IPCC*, as well as an explanation of current scientific consensus on the state of climate change.

Defining Climate Change

To analyze how the media miscommunicate climate change, a definition of climate change must first be established. Climate change is more than simply a change in weather. NASA defines weather as "atmospheric conditions that occur locally over short periods of time—from minutes to hours or days." Climate change, on the other hand, is the "long-term regional or even global average of temperature, humidity and rainfall patterns over seasons, years or decades" (NASA). Thus, due to its duration, climate change has more significance for the wellbeing of ecosystems and populations than changes in weather.

Climate change is often used as an umbrella term for a range of specific environmental issues, such as global warming, or to describe natural variability that is unattributable to it. Ford and King define climate change as "any change in climate over time, whether due to natural variability or as a result of human activity" (138). *Anthropogenic climate change*, specifically, designates climate change caused by human activity rather than natural variability. Miscommunication of both occurs in the media; however, anthropogenic climate change is more frequently contested.

About the IPCC

This thesis references findings from the Intergovernmental Panel on Climate Change (IPCC), which is sponsored by the United Nations and considered the internationally accepted authority on climate change. The panel is composed of the top climate scientists worldwide. It unites the abstract scientific community into a physical body which collaborates to produce Assessment Reports on global climate change. These reports review implications of climate change and offer recommendations to policymakers for solutions. Since its establishment in 1988, the IPCC has "enhanced understanding of global climate change through careful

interpretation of emerging climate research via peer-reviewed and consensus-driven processes" (Boycoff, "Convergence to Contention" 478). Its Assessment Reports are acknowledged as the scientific consensus on the state of climate change in academia, and such will be the case in this thesis.

Current Climate Change Consensus

The IPCC concluded that climate change has anthropogenic, or human, causation. Its 2021 report reflected the utmost certainty of human influence on global warming. Its Summary for Policymakers states, "It is unequivocal that human influence has warmed the atmosphere, ocean, and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere have occurred" ("Climate Change 2021" 8). While there is a consensus on the current state of climate change, future implications are an area of debate. Crawford writes, "A degree of scientific uncertainty remains about, for example, the ways in which atmospheric factors (e.g. clouds), ocean acidity, and the melting of ice sheets will be affected by increases in global warming, about the precise nature of future climate-related impacts in particular regions, and the speed with which impacts will unfold" (22). This uncertainty regarding the effects of climate change in the future leaves an opening through which critics question climate change.

However, despite attempts of critics to foster uncertainty about future changes, many Americans currently experience the effects of climate change. This impact occurs most noticeably for North America in the financial sector. The United States accounts for 38 percent of global economic losses caused by weather, climate, and water hazards. This amounts to US$203 billion, with half of those losses occurring in the 2010s (Blunden and Boyer 5). In 2019 alone, 14 weather- and climate-related disaster events with losses exceeding US$1 billion each occurred in the United States. These events included three floods, eight severe storms, two

tropical cyclones, and a wildfire (Blunden and Boyer 6). These events take not only a financial toll but also, more significantly, a physical toll. The aforementioned events in 2019 resulted in the deaths of 44 people (Blunden and Boyer 6). Contesting the occurrence of climate change is a questionable position, as North America and the world have experienced its effects.

Role of the Media Regarding Environmental Issues

Media are consumed by Americans from a variety of platforms, but all serve the same purpose. To evaluate the impact of media miscommunication of climate change, the role that media play in modern American society must first be understood. News is consumed from print publications, digital platforms, radio, and television. Digital and television platforms dominate American news consumption. According to the Pew Research Center, in 2021 68 percent of U.S. adults "often" or "sometimes" consumed news from television. Eighty-four percent of U.S. adults "often" or "sometimes" consumed news on a digital platform in 2021. Print and radio platforms, on the other hand, have lost engagement over time. According to the Pew Research Center, in 2021 34 percent of U.S. adults "often" or "sometimes" consumed news from print publications. Fifty-one percent of U.S. adults "often" or "sometimes" consumed news from radio in 2021. American society relies most heavily on digital platforms for news consumption, which will have implications for the style of reporting done on topics such as climate change.

The news media play an integral role in how people understand the world around them. The media possess the ability to draw connections between climate disasters and climate change that the public wouldn't otherwise observe (Weiner 51). Newspapers and online media perform the vital role of notifying a population of a climate emergency and its effects. However, American media are "inconsistent about evaluating and explicating one of the important implications of the planet's intensifying storms, droughts, fires, floods, and hurricanes: That

anthropogenic climate change is occurring and presents consequences to people living in the here-and-now" (Weiner 52). The American media, as a purportedly objective source, often shy away from drawing connections between climate emergencies and climate change.

History of Media Coverage of Climate Change

Even since the announcement of consensus by climate change experts, namely the IPCC, on the anthropogenic cause of climate change, media coverage of climate change has varied in quantity and content, primarily due to contention by non-experts. In 1995, the scientific community reached a consensus over the anthropogenic origins of climate change (Boycoff, "Convergence to Contention" 478). This marked the beginning of the potential for media miscommunication, given that there were now established findings.

Quantity of Coverage

Since 1995, there has been an ebb and flow of the quantity of media coverage of climate change. An increase in media attention to environmental issues typically corresponded with events, policies, disasters, and campaigns. Examples of this include the Kyoto Protocol, Hurricane Katrina, the documentary *An Inconvenient Truth*, the Paris Agreement, and meetings of the Conference of Parties. Specifically, Ford and King noted peaks in coverage in the years 2007, 2008, and 2013 (137). Thus, the quantity of media coverage of climate change increased with the occurrence of climate-related events rather than with the linear movement of time.

Content of Coverage

At this same time began a pattern of the media presenting contradicting ideas about climate change by non-experts side-by-side with scientific consensus, as if both were equally authoritative positions. The infiltration of contention was due to political, economic, and social agendas, which will be addressed later. Boycoff writes, "Media depictions consistently framed

discussions of anthropogenic climate science as contentious, despite the aforementioned consensus" ("Convergence to Contention" 482). For example, the *Washington Post* published an article covering the 1995 IPCC's consensus on anthropogenic climate change but also included a dissenting quote from an astrophysicist, who is not a climate science expert. Boycoff writes that this article "illustrates how coverage of consensus has been undertaken through the frame of 'contention'" ("Coverage to Contention" 481). When the well-researched consensus of climate change scientists is questioned, it seems to readers as if the reporter is skeptical. This apparent skepticism is misleading, as the IPCC, an extensive coalition of climate experts, has reached a consensus.

With a new century came a shift in the direction of the media's approach to climate issues. It was during the mid-2000s that climate researchers began to express their absolute certainty about climate change and the degree of its human causation, as research continued to support the IPPC's 1995 announcement. Boycoff writes in his 2009 study, "In the last decade, reports and findings have signaled a broad scientific consensus—despite lingering uncertainties regarding the extent of attribution—that humans have been contributing to modern climate change" ("We Speak for the Trees" 432). He cites the IPCC's Summary for Policymakers, which states that the increase in globally averaged temperatures is "very likely" due to anthropogenic greenhouse gas concentrations ("Climate Change 2007" 2). The IPCC's statement was the result of research on climate change by over 2,500 of the planet's top climate scientists. However, since the IPCC's phrasing of "very likely" left room for debate, media coverage during this time still varied in its position of climate change and the validity of available research.

A significant report of climate issues, due to its accuracy, occurred in *USA Today* on June 13, 2005, in an article by Dan Vergano titled "The Debate is Over: Globe is Warming." The

article decisively communicated scientists' conclusion that the earth was warming, and humans had contributed to it. Hopeful that the years of media miscommunication were behind them, scientists "felt this marked a watershed moment toward more accurate environment and science reporting" (Boycoff, "We Speak for the Trees" 432). The *USA Today* article represented a shift in the mid-2000s towards reporting environmental issues as experts described them: urgent and indisputable.

However, media organizations continued to publish articles during the mid-2000s that undermined the progress of supportive coverage. In 2008, *USA Today* published an article titled "Climate Now Shifting on a Continental Scale. – Study: Migration Patterns Adjust, Plants Bloom Early." In the article, reporter Doyle Rice "conflated a number of distinct scientific issues" as he wrote about the impact of climate change on wildlife (Boycoff, "We Speak for the Trees" 433). Specifically, he raised questions about fundamental climate findings that scientists had determined were irrefutable. This allowed for an opposing viewpoint to be included in the article as well. The article quoted the views of Pat Michaels, an agricultural climatologist known for his vocal opposition of climate change, arguing contrary to evidence that the climate might not be changing at all (Boycoff, "We Speak for the Trees" 433). Rice presented Michaels' opinion as if it was a competing fact with the well-established research and findings on anthropogenic climate change. This example demonstrates the questioning of established findings that undermined previous supportive coverage of anthropogenic climate change.

Most recently, the IPCC's 2021 report reflected the utmost certainty of human influence on global warming. Its Summary for Policymakers states, "It is unequivocal that human influence has warmed the atmosphere, ocean, and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere have occurred" ("Climate Change 2021" 8). This

statement from the internationally accepted authority on climate change makes it questionable for the media to convey skepticism about the influence of human actions on the environment without citing another expert source.

As society began to accept, for the most part, that this message of a changing climate was not merely a passing agenda but rather a reality, the focus of media reporting turned to the science itself, its impacts, and mitigation. This was a step in the right direction in comparison to 20 years prior. However, in 2015 Ford and King note a gap in coverage pertaining to adaptation to climate change. They define adaptation as "adjustments in human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (137). While most reporting focused on ways to undo past damage and create a better climate for the future, little reporting was devoted to how the public should adapt to the climate changes happening in the present moment. This has implications for public engagement and government policy regarding climate change, as will be observed later. Media reporting of anthropogenic climate change has varied in quantity and message since climate scientists have reached conclusions about the subject.

Media Practices at Odds with Science

The American public engages with scientific issues, specifically climate change, through the bridge of journalism. However, some methodologies and practices inherent in journalism the way it is currently conducted inhibit the media from properly communicating environmental issues. As Boycoff writes, "In fact, discontinuities can arise in media coverage of anthropogenic climate change through the very professional journalistic norms and values that have developed to safeguard against potential abuses of asymmetrical power" ("Convergence to Contention" 478). These practices, well-intentioned and typically beneficial to unbiased reporting of legal,

social, and economic issues, can hinder journalists from properly bridging the gap between scientists and the public. Bridging this gap between journalists and scientists is hindered by differences in processes, timeframes, language, and even values (Henderson-Sellers 439). Methods fundamental to each discipline can interfere with successful collaboration on issues of importance to the public. This section will provide an overview of media practices that can interfere with proper reporting of scientific issues like climate change.

Objectivity

The media purportedly value objectivity, often accomplished by communicating opposing opinions on a topic. This allows for an appearance of neutrality and provides the reader with the opportunity to make up their mind about the subject, often called balanced reporting. Similarly, the media seek to cover not only the opinion of the majority but also the minority viewpoint. Scientists, on the other hand, do not seek objectivity in this way but rather to delineate and prove a point. Objectivity does not benefit scientific communication; rather, it muddles it. Viewpoints do not exist, but accuracy or inaccuracy do.

The implication of journalistic objectivity on reporting about climate change is perceived uncertainty about the validity of anthropogenic climate change or insignificance of the problem. Boycoff writes, “The many micro-practices of journalism can serve to amplify asymmetrical power through providing coverage to a minority viewpoint, such as that espousing that humans have negligible effects on the climate” (“Convergence to Contention” 484). When journalists, in pursuit of objectivity, include opposing viewpoints in their reporting on climate change, they can convolute the truth. This is not always the outcome, as scientific data itself is subject to interpretation. However, it is important that consideration be given to whether the opposing

viewpoints raise well-researched questions about methodologies or premises of the study or are rather intended to foster disagreement.

Audience Engagement

Scientists and journalists require different amounts of engagement to successfully communicate information. Unlike scientists who publish information to contribute to a body of knowledge, journalists must write for a particular group. Scientists do not need to engage an audience for their work to be recognized and have value to society. Conversely, for the media to exist, they must draw an audience. This has implications for how the media present stories, particularly the communication of scientific research. Crawford claims that the media "do not simply reflect or reproduce simplified scientific knowledge for wider audiences; they actively engage audiences in accepting a version of reality" (23). Journalists cannot successfully share raw scientific information with their audiences; they must shape it to be relevant and understandable. In the process of creating engaging news, there is room for a breakdown of truth and meaning. Furthermore, in an effort to select newsworthy stories, journalists abandon objectivity. Rozanova argues that "mainstream media accounts are not objective; they promote stories for 'newsworthiness' and through this process influence dominant frameworks of understanding" (214). Newsworthiness has for its measure of success the rate of audience engagement rather than clear, decisive findings by a team of scientists.

Media Framing

Media framing is a term for how the media contextualizes information. Goffman defines media framing as "the ways in which elements of discourse are assembled that then privilege certain interpretations and understandings over others" (10). The media, as a matter of principle, frame issues in the context they view as proper and relevant for their audiences. In the case of

climate change, this involves including information from scientists, policymakers, and the public. Boycoff writes, “Through framing – constructed through processes of power and scale – media coverage of anthropogenic climate change can depict an arena of great confusion and intense conflict rather than scientific consensus” (“Convergence to Contention” 478). The effect of media framing on public understanding of climate change is powerful. The information the media use to contextualize scientific reports of climate change can mistakenly portray the issues as contested. When the media frame scientific reports with misleading contextual information, readers can misunderstand the consensus.

Deadlines

Modern-day journalism requires tight deadlines of its reporters. The fast-paced digital platforms through which 84 percent of Americans engage with news content have coached the public to expect information about unfolding events instantly (Pew Research Center). Journalists and scientists operate on vastly different timelines. The hours that a journalist is given to research and write an article differs greatly from the months or years allotted for scientific research. This spills over into the content and research each discipline seeks to obtain.

One implication of this is the inability of a journalist to contact enough sources to gain sufficient–or the correct–knowledge of the nuances of an issue. Henderson-Sellers writes, “Journalists are increasingly seeking ‘sound bites’: a few forceful words without qualification. Science is always incremental and necessarily underpinned by caveats” (439). Due to their short timelines, journalists seek concise, powerful pieces of information. Scientists, on the other hand, have the time to produce thorough, contextualized research. Tight deadlines also undermine the reporter’s ability to take time to thoroughly understand the complex issues they are writing about, particularly in the example of climate science (Boycoff, “Convergence to Contention”

483). This results in the failure of the media to communicate the full or accurate scope of the issue to the public.

Conflict

Journalists and scientists also fail to align on their relationship with conflict. Through multiple reviews by experts in the field, scientific publications are vetted to ensure that the arguments, analyses, and findings are of high enough quality to avoid inaccurate information from entering the scientific body of knowledge. This serves to not entirely eliminate conflict itself from the publications but rather to avoid the conflict that follows misinformation. Any sort of conflict would draw attention away from the issue at hand and its implications. Journalism, on the other hand, can inherently create conflict through its practice of communicating all sides of an issue. Boycoff asserts that "through the differing norms of knowledge production, these communities move toward different expressions through assessment: in one case there is convergence, and in another there is contention" ("Convergence to Contention" 485). Conflict sends news to print but scientific research back to the lab. The media is drawn to report on conflict, while science seeks to resolve it.

Events

Media coverage and scientific coverage operate on very different timelines. The media usually report on single events in time. Scientific research, however, takes place over longer periods of time, often ending with the results determined but the implications unknown. When the media cover scientific research, they often reduce their findings to conclusive outcomes. This serves to "underemphasize these 'creeping' stories as well as the contexts within which they take place" (Boycoff, "Convergence to Contention" 485). Many prominent environmental issues do not occur all at once but rather over an extended period of time. Each step in a direction is not

newsworthy itself, so it goes uncovered. Also, the media must choose what particular events to cover. This selection process "involves an inevitable series of choices to cover certain events within a larger current of dynamic activities. These events are then converted into news stories" (Boycoff, "Convergence to Contention" 478). By choosing single events to cover, rather than the often drawn-out timeline of environmental changes, the media underemphasize the impact of smaller climate events.

Opinion

Additionally, news organizations publish opinion pieces that argue for stances that oppose climate science. Even though such pieces are designated as opinion, their publication gives them enough validity to foster doubt about scientific conclusions in the minds of readers. Such opinion pieces contend that anthropogenic climate change is an unsettled subject. An example of this is an opinion piece by James Schlesinger titled "Climate Change: The Science Isn't Settled," published in the *Washington Post*. By including in its pages an article of this nature and title as an opinion piece, the *Post* helped to further the narrative that anthropogenic climate change is a contested issue.

Reoccurring Problems with Media Coverage of Environmental Issues

Problems that frequently occur in reporting, rather than being inherent in journalistic practice, also construe climate change as a disputed issue. These errors, while unintentional, still serve to contribute to media miscommunication of climate change. This section will provide an overview of these problems and their implications.

Representing Dissenting Opinions

The media also represent, and therefore validate, dissenting opinions that construct climate change as a contested issue. Boycoff writes, "Within the media – wherefrom the majority

of adults in the US are informed about science – claims that are dismissive of anthropogenic climate change are prominently featured" ("Convergence to Contention" 478). The choice to represent these opinions can be for a variety of reasons. The media often place the opinions of all scientists regarding an issue on the same level. However, a climate scientist and a paleontologist do not have the same level of expertise regarding climate change. While it is typically a foundational journalistic policy to feature both sides of an issue, unresearched opinions exist on scientific issues. Therefore, featuring them in an article on climate change hinders the ability of scientists to communicate the certainty and urgency of an issue.

This misstep is frequently observed in the American media. Articles portraying climate change in terms of debate, controversy, or uncertainty are plentiful, Antilla writes. In the media, "not only were there many examples of journalistic balance that led to bias, but some of the news outlets repeatedly used climate s[k]eptics—with known fossil fuel industry ties—as primary definers" (Antilla 350). Although an important function of media is providing a voice to all sides, it poses the risk of giving influence to those with ulterior motives. Possessors of dissenting opinions about climate change may have financial or political ties to organizations with vested interests in climate-damaging industries. Futher, these dissenting opinions impact public understanding by fostering ineffective debate in both the public and the government. Boycoff writes, "To the extent that mass media misrepresent and/or gratuitously cover these outlier views, they contribute to ongoing illusory, misleading, and counterproductive debates within the public and policy communities, and poorly serve the collective public" ("Public Enemy No. 1?" 796). Using climate skeptics as sources, even as dissenting ones, allows misinformed, contradictory information to reach the public.

Use of Media by Climate Skeptics

The media have also proved to be a tool for climate skeptics to advance misinformation. Antilla found that "by enlisting the media, climate s[k]eptics continue their very cynical and deeply interested campaign to discredit the science of climate change" (350). Upon being included as a source in an article, climate skeptics can use the opportunity to further their agenda. As this continues to occur over time, these skeptics gain credibility and recognition in the eyes of both the public and media sectors. As Boycoff writes, "Contentious challenges to anthropogenic climate science manifested through a group of 'climate contrarians' who have gained greater discursive traction through the media, and, as a result, have significantly affected public understanding" ("Convergence to Contention" 482). By means of repeated coverage by the media, skeptics can become established voices on climate change.

Questioning Established Findings

An additional implication of the media including both sides of an issue is the appearance of questioning established findings about climate change. The media can frame climate science as uncertain primarily by "the practice of interjecting and emphasizing controversy or disagreement among scientists; this often creates drama and provides journalists 'with a guise of objectivity'" (Zehr 90). Including controversy among scientists in an article about climate change breaks down the united front of climate experts. For example, on October 23, 2003, the *Atlanta Journal-Constitution* published an article titled "Dramatic Drop in Arctic Ice Documented." The article covered research by Josefino Comiso published in the *Journal of Climate*, in which Comiso asserted that "a sustained warming of the magnitude observed would cause profound changes in the Arctic region, especially in the sea ice cover, parts of the Greenland ice sheet, the permafrost, glaciers, and snow cover over northern Eurasia and North

America" (3509). While this was a scientifically backed assertion, the article also falsely inferred a lack of scientific consensus with the statement, "There is little agreement on the reasons for climate change" (Comiso 3498). Including this statement made the article appear to question established findings of the effects on climate change on the Artic region.

Conflation of Separate Issues

A side effect of tasking journalists, who typically are not environmental scientists, with writing about climate change, is the conflation of separate issues. Boycoff writes, "The overarching quandary facing contemporary media coverage of the environment is that many distinct issues and challenges are conflated and confused, thereby skewing public understanding, governance, and policy action" ("We Speak for the Trees" 433). Journalists can misinterpret separate environmental issues as being interrelated or unrelated. This then affects decisions by the government and public who base their decisions on this information.

One practice by which this happens is the use of blanket statements and labels in media coverage. Using blanket labels on those who make claims about climate change "overlooks the varied and context-dependent arguments they put forward. Media portrayals that pay attention to these subtleties frankly help citizens better understand and engage with climate science and governance" (Boycoff, "Public Enemy No. 1?" 804). By grouping those who advocate for similar policies into one category, the media ignore the subtle differences between their positions. This results in misunderstanding of the policies an individual may be advocating for.

Using Biased Sources

The media also can report on environmental issues using inaccurate or biased sources of information. Due to aforementioned time constraints, journalists frequently have to rely on information produced by agenda-setting agencies. These conditions tend to lead journalists to

trust in “easily accessible materials originating from the government, the PR-industry, and other powerful claims-makers” (Olausson 252). These releases can contain agendas set by the organizations that released them. They can also contain misinformation if not written by experts in the topic at hand. The media then pass this biased information on to the public.

Reporting Findings Incorrectly

A similar problem is journalists who do not understand the issues they write about. Despite seeking out knowledgeable sources, there is still room for human error. This can occur as journalists, without knowledge of climate science, try to interpret findings to the public. In this process of translation from scientific communication to mass media communication, scientists find that their research is often reported differently from what they intended (Henderson-Sellers 431). This frustrates scientists and can render their work ineffective. This inaccurate reporting also “prevent[s] a more extensive understanding of climate change by the public and policy-makers. Public confusion is exacerbated by reporters who misunderstand the basic scientific principles of climate change” (Antilla 350). The misunderstanding of journalists can be passed along to the public and governing forces who then take action on and create policies based on the misinformation.

Suggesting Incongruity

The media often include dissenting opinions from scientists in stories about climate change as part of their commitment to objectivity. However, this suggests incongruity between scientific findings when little truly exists. Anitlla writes, “One problematic trend of the US media has been the suggestion that substantive disagreement exists within the international scientific community as to the reality of anthropogenic climate change; however, this concept is false” (338). While debates do exist over the anthropogenic origin of climate change, they are

not within the community of climate experts. Reporting them perpetuates a narrative of incongruity and disagreement. An implication of this perceived incongruity among scientists is public mistrust of research. Boycoff writes, "To-and-fro arguments covered in media accounts … also generate considerations of "who to trust": in science, in media, in experts, in authority" ("Public Enemy No. 1?" 797). Suggesting incongruity among scientific research fosters a culture of mistrust in society towards their sources of information.

Gaps in Coverage

The media focus on timely events – single moments that can be summarized into a publishable story. However, this focus often excludes the progression of smaller events that accumulate over time. As Stamm writes, "Content analysts typically find gaps in media coverage due to episodic coverage of dramatic events, and to focusing superficially on human interest and economic impacts, while overlooking systemic concerns" (219). The events with a tangible impact on the population make the news, but the underlying causes of these climate events go unreported. They require careful analysis that often exceeds allotted reporting time. This results in a gap in the coverage of the smaller events and underlying factors.

Drawing Attention to Disagreements

The media, by covering disagreements about climate change, inadvertently draw attention away from the issues at hand and their implications. In 2003, the *NBC Nightly News* segment "Clearing the Air" highlighted claims by the Bush administration that the EPA's "Report on the Environment" wasn't construction of sound scientific research (Boycoff, "Convergence to Contention" 482). The story drew more attention to the conflict between science and government than to contents of the report on climate change.

Additionally, topics published by the media become considered social problems due to the social nature of media. Boycoff writes, “Therefore, it is primarily through the media that climate change is publicly represented and in this sense, it is the media that construct climate change as a social problem” (“Convergence to Contention” 478). While climate change is a problem that affects the general public, it is not merely a social problem to be debated. This can reduce the perceived severity of its implications.

Failure to Draw Connections

Drawing connections between events and their causes is a powerful way to move the public towards action. The media possess the ability to draw connections between climate disasters and climate change that the public wouldn’t otherwise observe (Weiner 51). Newspapers and online media perform the vital role of notifying a population of a climate emergency and its effects. However, American media are “inconsistent about evaluating and explicating one of the important implications of the planet’s intensifying storms, droughts, fires, floods, and hurricanes: That anthropogenic climate change is occurring and presents consequences to people living in the here-and-now” (Weiner 52). The media have the ability to point out the cause-and-effect nature of climate issues, but they often do not exercise it.

Openness of Digital Spaces

As the media have transitioned formats from print to digital, the space has been opened to discourse by nonexperts. Digital media do not require the same access to printers that print media do, thus providing the opportunity for anyone to publish their opinions on climate change. Olausson writes, “The rapid expansion of news sources in the twenty-first century, with the emergence of bloggers, citizen journalists, etc., the borders between producers and consumers are becoming increasingly blurred” (253). Anyone with access to media-creating equipment can

now share their opinions in much the same way a journalist would. Media, journalistic or otherwise, can be created more easily and thus no longer vetted or limited to the same extent as print.

Scientists' Issues with Media Coverage

Scientists and the media use different communication styles and language, which is particularly evident in how they report their findings. Scientists lean towards caution and modesty when communicating research results and "have a propensity to discuss implications of their research in terms of probabilities" (Boycoff, "Convergence to Contention" 483). Additionally, scientists tend to qualify their findings in light of uncertainties in their research. This caution can be perceived by journalists as uncertainty. Journalists have a difficult time translating scientific results "into crisp, unequivocal commentary often valued in communications and decision making" (Boycoff, "Signals and Noise" 209). For example, in peer-reviewed scientific findings, scientists build the case of the research and then place key findings later in the results and discussion sections. On the other hand, in media writing, reporters begin articles with the most important conclusions and discoveries (Boycoff, "Convergence to Contention" 483). This is the practice of crafting an attention-grabbing lead. Scientists also use jargon instead of everyday language, which poses difficulties for journalists as they seek to interpret information for the public (Henderson-Sellers 431). The difference in content and presentation poses an issue for the translation of scientific information into public understanding since scientific conclusions are more tentative than news reports indicate.

Impact of Media Coverage on Public Perception and Engagement

Poor media coverage of environmental issues has implications beyond simply a lower quality of reporting. The public and governing officials make decisions about how to handle

environmental issues based on media portrayal. Covering environmental issues incorrectly has implications, especially for a public that relies so heavily on the media for its understanding of scientific research. This results in "a storyline of increased uncertainty and debate over time" (Boycoff, "Convergence to Contention" 482). Poor coverage serves to amplify uncertainty and undermine the influence of climate scientists.

Role of Public Perception

The public takes cues from the media about what issues are relevant, which gives the media great power regarding public engagement in climate change solutions. Loy found that when people notice a decrease in media coverage of climate change, they perceive the issue as less of a priority. This decreases their motivation to make behavioral changes to their environmental footprint. Conversely, an increase in media coverage has the potential to encourage public engagement (2101). The media have the ability to shape public perception by the quantity of coverage they give an issue.

Implications for Public Engagement

A key role of the media in bridging the gap between awareness, attitude, and behavior is the creation and the enforcement of social norms. With strong social norms in place, consumers are "more likely to act on their attitudes if the attitudes are consistent with the social norm" (Chen 997). The media play a role in establishing these social norms, including norms regarding the response to anthropogenic climate change. For example, if consumers are exposed to media discourse about reducing fossil fuel use, they are more likely to implement measures in their own lives to do so.

Engaging the public can take two forms: private-sphere and public-sphere. Private-sphere engagement includes individual actions such as adjusting transportation, energy, and resource

use in an effort to reduce the carbon footprint. Public-sphere engagement includes joining an organization devoted to climate protection or discussing climate change with others (Loy 2100). Both are necessary for reversing climate chance and can be influenced by the media.

Lack of Support for Mitigation Efforts

Uncertainty about the validity or implications of climate change because of media coverage can impede efforts to correct it. Public uncertainty about climate change and associated policy action has been found to "distract as well as potentially destabilize public support for climate mitigation and adaptation endeavors" (Boycoff, "Public Enemy No. 1?" 801). When the public is more focused on disagreements about climate change, they are less likely to support measures to reverse it.

Scientists' Refusal to Engage

As a result of poor coverage, the media can fail not only to engage the public but also the scientific community as well. Because of the media's coverage of climate change, the climate science community can be hesitant to work with the media (Smith 1474). This deprives journalists of potential sources of information and understanding of these complex issues.

Lack of Urgency

A lack of urgency in the public's attitude towards climate issues can be attributed to the media portrayal of such issues. Davidson observed a gap between the urgency of climate issues as communicated by climate scientists and public complacently towards these issues (166). As the bridge between scientists and the public, the media bear some responsibility in communicating this urgency. When this urgency is not communicated, the public can fail to take the necessary actions advised by climate scientists.

Consumer Purchases

Media, as influencers of public perception, affect consumer purchases. A tangible example of this is the sales of hybrid vehicles. Media coverage of anthropogenic climate change positively impacts the sales of hybrid vehicles. Chen found that "this impact mainly comes from media coverage that admits rather than denies climate change. In contrast, media coverage that either takes a neutral stance or denies climate change has little impact on hybrid vehicle sales" (996). This exemplifies how the media's portrayal of climate change affects customer decisions in the market.

Global Versus Individual Engagement

The media's climate change coverage also can miss the importance of global changes needed to reverse climate change for the small, individual-scale issues. The reverse is possible as well – focusing only on global issues while excluding individuals from involvement in problems or solutions. Discussion of micro-lifestyle changes "tends to block awareness of the necessity of global climate measures often addressed by political discourse, while, in turn, the global orientation of political climate discourse risks preventing the individual from feeling included in the management of climate change" (Olausson 251). Placing the blame for anthropogenic climate change and the responsibility for its reversal on the individual can leave the public feeling powerless to change. Conversely, only covering climate change on the global scale removes the individual from responsibility for their environmental impact. A balance of both effectively involves the individual while recognizing the global scale of climate issues.

Impact of Media Coverage of Environmental Issues on Government Policy

The freedom of the press is integral to ensuring American democracy and government integrity and is often referred to as the "Fourth Estate." Within recent American history, the

press has adopted a claim to non-partisanship, holding the government accountable for cases of corruption, injustice, and discrimination. A notable example that shaped this role of the media is Bob Woodward and Carl Bernstein's investigation of the Watergate scandal. These reporters exposed abuses of power by an administration through journalistic means and effectively forced a president to resign from his position (Aucoin 17). Through this work, Americans saw firsthand the potential of the press to serve as a watchdog of the government. However, this was not the first instance of the media's work instigating meaningful change to the actions of those in authority. Many labor reforms were brought on by the work of "muckrakers," as investigative journalists were dubbed by Theodore Roosevelt, in the early 20th century (Aucoin 4). Reporters shared stories of corruption that led voters to support movements promising reform at the polls. The media, through their watchdog reporting of the government and its shortcomings, function to preserve liberty and democracy.

Both the earliest forms of print media and modern media, such as radio and television, have been forums for political discourse and debate. From the very beginning of American history, newspapers were used during the Revolutionary War to unite colonists against Great Britain. These newspapers "provided the intellectual setting and the "public sphere" where the debate over independence took place" (Daly 35). Outrage over unfair taxation and government was expressed through printed newspapers, and readers were inspired and encouraged by the sentiments as war began. During the mid-19th century, abolitionist presses urged the public to accept the emancipation of slaves, paving the way for equal rights to begin to be implemented (Daly 73). President Franklin Roosevelt's fireside chats allowed him to talk directly to his constituents over the radio, beginning a movement of the media allowing politicians to speak directly to the people. The media's coverage or lack of coverage of political events and issues

influences public opinion as well. Since the media decide what to cover, they have influence over political opinions. One aspect of this is presidents' approval ratings. Positive media coverage of presidents results in higher approval ratings from the public. Media, throughout American history, have served as a prominent forum for political conversations and exchanges of ideas.

Influence of media coverage and politics as it pertains to the environment is a two-way street. Environmental politics influence how the media cover environmental issues. Conversely, media coverage influences the conversations and perceptions pertaining to the politics of environmental issues. As Boycoff states, "Mass media influence who has a say and how" ("We Speak for the Trees" 435). Governing officials covered by the media can find themselves with more influence than those that are not, leading to greater political power.

Voter Advocacy

The United States government must address issues that arise in the consciousness of the American public. Voters can urge their representatives to take action through passing legislation. This is where public perception of environmental issues is important. As the public debates and forms opinions on climate issues, policymakers want to know where their constituents stand. Their public risk perceptions "drive policy as much as scientific risk assessments" (Kellstadt 114). In this way, voters can shape policy. Thus, it is important that the media keep them accurately informed of the current state of the climate.

Additionally, the media can also influence public support in favor of or against government funding for measures to mitigate climate change. Proposed climate initiatives require support, both socially and financially. Davidson writes, "Investments of public resources to support any new initiative require public support for those initiatives" (166). If social support

is present for an initiative, it is more likely that financial support will follow.

Polarization of Political Parties

Division along party lines is observed in many issues in the U.S., and the same is true of climate change. Even as scientists have become more established on the anthropogenic causation of climate change, politicians on both sides have taken opposing views and proposed opposing policies addressing climate research. Carmichael found that from 2001 to 2014, Republicans have become increasingly less concerned about climate change, while Democrats have become increasingly more concerned (606). Additionally, those possessing Democratic and liberal ideologies "are more likely to regard climate change as risky and are more likely to support costly risk mitigation public policies" (Kellstadt 115). Thus, as media become politicized, those aligning with an outlet's views will subscribe to its political positions regarding climate change.

Conclusion

The media are arguably one of the strongest, most influential forces in American society. With the ability to and privilege of bridging gaps of knowledge in a variety of social sectors (government, science, and the public), communicating information about one sector to another accurately is a crucial media responsibility. This is important because the public and governmental actors make decisions based at least partly on media portrayals of issues.

Scientists and journalists, due to differing objectives and methodologies, sometimes lack the sufficient understanding of each other, and this can result in misinterpretation and misrepresentation. This outcome can hinder society from making progress in the remediation of social problems like climate change. Identifying the causes of these misunderstandings and devising interdisciplinary communication strategies to avert these could help generate more accurate news reporting and, by extension, progress in solving the problems of our time. This

becomes increasingly more important with every passing day and story publication, as the climate – and opinions – change.

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