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Shelly A. Galliah

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“YOU DON’T NEED PEOPLE’S OPINIONS ON A FACT!”:
SATIRICAL COMEDY CORRECTS CLIMATE CHANGE DISINFORMATION

By
Shelly A. Galliah

A DISSERTATION
Submitted in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY
In Rhetoric, Theory and Culture

MICHIGAN TECHNOLOGICAL UNIVERSITY
2020

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This dissertation has been approved in partial fulfillment of the requirements for the Degree of DOCTOR OF PHILOSOPHY in Rhetoric, Theory and Culture.

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Abstract

Satirical comedy has often been recognized as a corrective to, if not alternative for, commercial news as well as a source of accurate science information (Brewer & McKnight, 2015). In this dissertation, I analyze how satirical comedy debunks climate change myths, delivers accurate information, and promotes scientific expertise. Five interconnected assumptions guide the context and methodology of this interdisciplinary study: 1) that various actors have transformed climate change into a “manufactured scientific controversy” (Ceccarelli, 2011); 2) that satire, as a method, both assails targets and aggregates people (Hutcheon, 1994); 3) that celebrity activism is impactful, but problematic (Collins, 2007; Boykoff & Goodman, 2009); 4) that the YouTube comment board represents an audience study (Lange, 2008); and 5) that online comment is worthy of analysis (Reagle, 2015). This project analyzes two case studies, each consisting of two examples of satirical climate change comedy from John Oliver (his *Statistically Representative Climate Change Debate* and his *Paris Agreement* monologues) and from Jimmy Kimmel (his *Scientists on Climate Change* and *Hey Donald Trump -- Climate Change Affects You Too* segments). A three-tiered, mixed-methods approach is adopted to investigate the context, construction, circulation, and online reception of these satirical comedy videos.

My project finds that the discursive integration (Baym, 2005) of satirical climate change comedy is potentially persuasive, but also risky and polarizing. Though centrist and left-of-center voices appreciate Oliver’s and Kimmel’s satirical interventions, conservative and right-of-center voices mark strict boundaries between comedy, celebrity, and climate change. It was also discovered that satirical comedy, which is accessible and viral, may intervene on YouTube’s climate change denial problem, correcting climate change falsehoods, and potentially drawing audiences away from their echo chambers and towards meaningful communication about the climate crisis. That is, many commenters use these videos as entry points to debate the causes of American climate change denial, correct climate change disinformation, and offer anecdotal evidence about the effects of climate change. At the same time, YouTube comments from the most resistant skeptics and repeat commenters provide insight into the persistence of circulating climate change myths and conflict frames. This study finally concludes that the analysis of comments on satirical climate change comedy exposes strategies for avoiding confirmation bias and the backfire effect along with techniques for creating more effective climate change communication.

1 Introduction: The Climate Change Controversy

This short chapter contextualizes my project by summarizing the representation of anthropogenic global warming in 1.1. Section 1.2 presents a summary of my project as well as an overview of my case studies. A brief map for the rest of my dissertation is included in 1.3.

1.1 The Representation of Anthropogenic Global Warming

Humanity's effect on the climate and the environment, though a pressing problem now, is not a new concern. This subject troubled Arrhenius (1896) when he painstakingly tabulated the natural processes supplying and decomposing carbonic acid (carbon dioxide). He eventually attributed most of the increasing atmospheric CO₂ levels to naturally occurring "volcanic exhalations" (p. 272), an explanation that still, unfortunately, circulates among climate change deniers today. However, Arrhenius also speculated that human action—the accelerated burning of coal—increased atmospheric carbon dioxide precipitously (p. 270). Fossil fuel consumption is now known as one of the main drivers of anthropogenic global warming (AGW) as well as other environmental damage (Barbir, Veziroğlu, & Plass Jr, 1990). Still, many Americans resist these causal connections along with the changes they imply: reducing the dependence on and consumption of fossil fuels, switching to cleaner energy sources, and making the related corresponding lifestyle and policy changes. Admittedly, climate change denial is an international issue, but this problem is the most prevalent in the United States. In a 2014 Ipsos Mori report polling 16,000 people from twenty countries, the U.S. came in as the leader in climate-change skepticism, followed by Great Britain and Australia (Erickson, 2017). For Americans, at

least, the climate change problem, which contains many actors with often competing interests, is particularly complex and resistant to closure (Englehardt and Caplan, 1987). As I was editing this introduction, in fact, a letter to the editor in my local paper, *The Daily Mining Gazette* (Houghton, MI) contends that the issue of global warming was invented by Al Gore to secure millions of dollars. The writer also contends that people should not be concerned about climate change, which is part of God's plan.

Politics definitely contributes to keeping the climate change debate open. That is, anthropogenic global warming has become an increasingly politically polarized issue (Nisbet, "Communicating," 2009) in which there are two Americas starkly divided along ideological lines: on the one side, stand religious and business conservatives as the most skeptical about AGW's existence and its seriousness whereas on the other side, stand liberals as the most concerned about climate change and the appropriate policies to address it. Leiserowitz (2011, 2016) has further segmented the population into six Americas ranging "along a spectrum of concern and issue engagement" about global warming: these categories are "the alarmed, the concerned, the cautious, the disengaged, the doubtful, and the dismissive" (p. 5). Unfortunately, back in 2011, one quarter of the American population fell into the doubtful or dismissive categories with the same members of this sector also believing themselves very informed about climate change science (Leiserowitz, 2011, p. 23). In other words, the people most doubtful about both climate change are also those who believe they are the most informed about the subject and the least in need of scientific information. Even more disconcerting is the trend of increasing skepticism and decreasing concern between 2008 and 2011 (Leiserowitz, 2011). Whereas 51% of the 2008 population was "alarmed" or "concerned" about climate change, that number, in 2011, dropped to

39%. Those doubting or denying global warming also increased from 30% in 2008 to 35% in 2011. In a more recent 2018 Yale climate poll, 32% of those surveyed still disagree that human activities contribute to global warming whereas 39% doubt AGW will have harmful effects (Marlon et al, 2018).

This skepticism and these gaps are especially troubling given the urgent need to mitigate anthropogenic global warming. A selection of recent facts paints a disturbing, if not disastrous scenario, a tipping point for the climate change crisis. Currently, atmospheric CO₂ concentration has reached an unprecedented level; Arctic ice is shrinking 12.8 % per decade; and the global average sea level has risen almost seven inches over the last century. Putting these isolated details into perspective, NASA estimates that 11% of the world's population is vulnerable to the effects of climate change, particularly episodes of heavy rainfall and more extreme storm events (NASA, "Facts," 2018). For instance, on August 28, Hurricane Dorian, a Category 5 monster storm with 185mph winds, devastated the Bahamas and Abaco islands, causing over seven billion dollars in damage and killing several people. Thereafter, it moved up the east coast, replacing its eye and entering Florida as a Category 3 storm. Dorian then landed in Nova Scotia on Saturday, Sept. 7 as a Category 2 post-tropical cyclone with hurricane-force winds. September 8 saw the storm finally drifting off the Labrador coast, where it will be absorbed by a low pressure system. From the tropical wave that generated it to its dissipation, Dorian was active for over two weeks. One of the longest, most violent storms, Dorian dissipated and then regained strength as it moved northwards, interacting with other weather systems. As is evident from the disaster caused by Dorian, the evidence of climate change surrounds Americans, yet

many remain incredulous about this environmental crisis and humans' role in both causing it and addressing it.

Popular culture may work to remind publics of the seriousness of climate change and the responsibility of governments in intervening in it. In particular, *satirical comedy* (the term I use for the blend of comedy and satire that is the subject of my project) may intervene by debunking climate change myths, communicating accurate climate change information, and promoting discussion about climate change. For instance, on February 20, 2019, comedian/talk show host Seth Meyers aired an eight-minute monologue entitled *The Real National Emergency is Climate Change* on his program *Late Night with Seth Meyers*, which, at that time, was his most watched segment (2,013,901 views, 22,000 likes, and 3820 comments). In this segment, Meyers begins with the claim that “President Trump and his allies are freaking out about a Democratic plan to fight climate change.” He references the president’s declaration that the lack of a border wall is a national emergency as well as a Fox pundit’s response to it: “if you declare a national emergency to circumvent Congress to pay for the border wall, what’s to stop a liberal Democrat one day from declaring climate change as a national emergency?” After showing similar clips mocking the climate change emergency, Meyers then contrasts the fake threat of immigration with the real crisis of climate change, which cannot be stopped with only a wall. He then summarizes alarming reports stating there is a very small time period—only twelve years—to limit the serious effects of climate change. Meyers then recalls President Trump’s November 16, 2018 appearance on Fox News in which he suggested that the California fires were caused by bad forest management (not raking the dry leaves and so on) to exemplify how the Republican party is not responsibly (or reasonably) addressing the climate crisis.

All of these announcements contextualize Meyers' explanation of The Green New Deal, a ten-year economic plan to phase out fossil fuel use, which is being led by Congresswoman Alexandra Ocasio-Cortez. Meyers tries to assuage viewers that the deal is merely a framework that "sets out a series of goals" and combines environmental and economic plans. Its end goal is not to eliminate "planes, cars, cows, gas, & the military." In short, in this segment Meyers does his best to correct the president's fearful disinformation about the Green New Deal while explaining what its actual goals are: making renewable technologies more efficient and more affordable so that Americans may rely less on fossil fuels. Meyers explains that the Republicans are manufacturing a fake immigration crisis while ignoring the genuine national emergency of climate change and mocking the most reasonable solutions to address it.

Televised satirical comedy, then, has the potential to get the attention of audiences while correcting mis and disinformation, such as Seth Meyers did in his thoughtful explanation of the Green New Deal. Satirical comedy may also act as a watchdog on and corrective for fake news and conspiracies (Zinser, 2007). In its ability to inform, persuade, and engage, it animates audiences to discuss its subjects, such as climate change, both on YouTube comment boards, and, perhaps outside of them. Along with Meyers, John Stewart, Stephen Colbert, Trevor Noah, Samantha Bee, John Oliver, and Jimmy Kimmel, as well as others, have dedicated significant time to deconstructing the misrepresentation of climate change and to conveying accurate information while keeping their audiences laughing, in the pleasant state of fun (Eastman, 1948).

Despite my assessment of satirical comedy, I recognize that television has been the locus of several moral panics and the subject of many polemics on how it, as both medium

and message, is eroding Americans, particularly their intelligence, their understanding of politics, and their civic engagement (Postman, 1985; Scheuer, 1999; Putnam, 2000). These concerns are still here, recycled and repackaged in contemporary moral panics associated with digital technologies and social media and their promotion of time-wasting, cyber-bullying, and immorality (Burgess and Green, 2009, p. 19). According to Burgess and Green, this fearful rhetoric is often directed at YouTube, which, unfortunately, is also a main source of climate change disinformation.

For instance, consider far-right talk-show host Alex Jones, the “most paranoid man in America” (Zaitchik, 2011) and the nation’s leading conspiracy theorist (Coscarelli, 2013). Known for his free-wheeling rants about the 911 hoax and global government control, Jones had, until recently, promoted his populist product on his *Infowars* website; he also hawked his bizarre speculations on his own subscription channel. Jones has specialized in fake news focusing on far-right conspiracy theories, one of which was the global warming hoax. According to Desmog, Jones has regularly aired conversations with these notorious climate-change deniers: Christopher Monckton, Marc Morano, John Coleman, and James Delingpole. He has also frequently endorsed the idea that climate change is a leftwing global hoax and that the sun is the main driver of climate change. Though obviously an entertainer, he pretends to be a muckraking journalist revealing the truth (such as about climate change) that devious political elites are hiding from the America populace. When I began this dissertation, Jones’ programs were in full force; at the time of this writing, he has been banned from Facebook and YouTube for violating their rules against hate speech (Alexander, 2019; *Washington Post*, 2019). However, the effects of his lies will long be felt in climate-change-denying echo chambers. Also, his

fabrications still get aired, such as in his frequent appearances on the podcast *The Joe Rogan Experience* (2009-present). Jones is not alone in spreading doubt; the next chapter will expand on and classify other factors and players contributing to climate change misrepresentations.

I have mentioned Jones because he exemplifies how when it comes to the depiction of climate change, popular culture is both part of the problem and part of the solution. He and others like him use popular culture and their celebrity influence to spread mistruths about scientific expertise and the climate change crisis. At the same time, satirical climate change comedy demonstrates how popular culture might be an antidote, if not a partial cure, to the lies spread by Jones and his ilk. Like a Trojan horse, popular satire may use the guise of entertainment to slip in serious subject matter and educate people. When publics engage with and share these satirical messages about the climate change crisis, they are extending the reach of these important communiques.

1.2 Summary and Overview of Case Studies

My interdisciplinary project combines theories of satire, media and popular culture studies, science communication, and limited big data analysis (through an investigation of YouTube comment boards). Five interconnected assumptions, which will be unpacked in subsequent chapters, guide the context and methodology of this study. The first assumption is that various forces and actors have propagated climate change disinformation and transformed climate change into a “manufactured scientific controversy” (Ceccarelli, 2011). The second is that satire, as a method, both assails targets and aggregates people (Hutcheon, 1994). This project recognizes that satire is persuasive, especially in

intervening in the manufactory of climate change, but also problematic. That is, satire is slippery; its edge and its potential for misinterpretation may result in insiders and outsiders. This dissertation also assumes that celebrity activism is impactful, especially when celebrities appear authentic, when there is a consonance between their onscreen and private selves (Collins, 2007; Chouliaraki, 2013). In contrast, celebrity activism may also be resisted, seen as mere virtue-signaling (Bartholomew, 2015) or as a clever strategy to increase one's public profile, prestige, and fans without engaging in significant risk (Littler, 2008; Brockington, 2008, 2009). The final two related assumptions are that the YouTube comment board may represent an audience (Lange, 2008); and that online comment, however difficult to read, is worthy of analysis (Reagle, 2015).

In this project, I analyze two case studies, each consisting of two examples of satirical climate change comedy from John Oliver and Jimmy Kimmel. Two of the case study texts are from John Oliver's program *Last Week Tonight* (2014-present) whereas the other two are from *Jimmy Kimmel Live!* (2010-present). The first case study consists of John Oliver's *Statistically Representative Climate Change Debate* (May 11, 2014) and his *Paris Agreement* segment (June 4, 2017). These two videos have the following viewers, respectively: over eight million and over ten million, making them two of the most viewed satirical comedy videos on climate change. The second involves two of Kimmel's segments addressing climate change denial: *Scientists on Climate Change* (May 2, 2016) and *Hey Donald Trump -- Climate Change Affects You Too Affects You Too* (Oct. 10, 2018).

When I first conceptualized this project, I decided upon Oliver's *Statistically Representative Climate Change Debate* and Kimmel's *Scientists on Climate Change* segments for three reasons: 1) they were, at that time, the most watched satirical videos on

climate change, which were also incredibly viral. Although it is spurious to equate the popular and the good, it was clear that these examples of satirical comedy were 2) impacting the climate change conversation and reaching several viewers. Kimmel's *Scientists on Climate Change*, the second major time he addressed a scientific controversy, seemed to mark a turn for the comedian; this segment, at the time, was also one of his most watched.

Both videos were also selected for 3) how they converge and diverge. These two examples of satirical climate change comedy take strong persuasive stands on the scientific consensus of climate change, but the methods, programs, and fan bases of both comedians differ. To deepen my case studies and complicate my analysis, I then added videos that demonstrate both hosts' continuing investment in responding to events in the climate change narrative as well as correcting climate change disinformation.

For these case studies, I track the engagement with and spread of their satirical climate change comedy—both across the internet (for a selected period) and on a specific media-sharing platform (YouTube) in order to answer these two main research questions:

- *RQ1: How does popular culture, which in this case is satirical climate change comedy, attempt to intervene on and correct climate change misrepresentations?*
- *RQ2: What do the use of and reception of select videos reveal about popular culture's role in climate change communication?*

Each of these research questions is further divided into sub-questions directing components of the analysis and the corresponding method:

- *RQ1A: How do the celebrity and history of Oliver and Kimmel impact their climate change messaging?*

- *RQ1B: To what climate change story and/or climate change misrepresentation (context) are their satirical texts responding?*
- *RQ1C: How do Oliver and Kimmel attempt to correct faulty climate change communication and to persuade their audiences?*
- *RQ2A: What do online comments on selected satirical climate change videos reveal about how and why audiences resist and support these satirical texts along with how they interpret certain climate change representations and narratives?*

1.3 Overview of Chapters

Chapter Two, “(Mis)Representing Climate Change,” analyzes some of the main conditions and factors influencing misrepresentations of climate change, particularly its transformation into a “manufactured scientific controversy” (Ceccarelli, 2011). It argues that mainstream journalism’s flawed history of communicating science is tied to changing media structures and specific routines that are inappropriate for accurate climate change communication. This chapter also investigates how right-of-center media and planned disinformation campaigns have generated serious doubt about climate change as well as exacerbated its polarization. The efforts of various presidential administrations (not solely the current one) to attack the legitimacy of climate science have also contributed to confusion over the seriousness of the climate crisis. This chapter ends by analyzing the current historical moment, specifically the continuing efforts of President Donald J. Trump and his administration to minimize the seriousness of climate change, to censor climate science, and to stress climate change adaptation over mitigation.

Because this project involves analyzing the potentials and perils of satirical climate change comedy, Chapter Three, “The Corrective of Satire,” summarizes satire’s approaches while recognizing its effectiveness, ambiguity, and contentious politics.

Relying on definitions of satire as well as Linda Hutcheon's concept that satire is a form of irony with two main functions—to assail for the purpose of correcting and improving and to aggregate communities around those who appreciate or reject its targets—I argue that satire's charge, whether negative or positive, may motivate people to share it, reaching new audiences. This chapter also claims that late-night hosts, through their satirical television programs, have often dispensed more truthful journalism and accurate science news than representatives of the mainstream press. Satirical television programs not only provide incisive political analysis, but also include content (such as international affairs) often ignored or underplayed by the mainstream news (Baek, 2009; Gray, Jones, & Thompson, 2009; Jones & Baym, 2010; Baumgartner, 2011). They also challenge "the ways we think about news content, its distribution patterns, and its relationship to audience" (Baym, 2009, p. 147). Their strategies to combine science information, political analysis, and entertainment make them particularly suitable for providing accurate information about climate science and critiquing the politicization of the climate change crisis. However, this chapter also acknowledges that satire, because of its divisiveness and its slipperiness, might not always be the best vehicle for communicating information about scientific subjects.

Chapter Four, "Methodology" justifies and presents my two case studies and explicates the three-tiered mixed-methods approach used in each: a close textual and contextual analysis of the examples of satirical climate change comedy (step one); a brief exploration of the online circulation of these satirical texts (step two); and, the bulk of my project, an analysis of their reception on their YouTube comment boards (step three).

This chapter also clarifies the last component of my method, focusing on a specific forum of participatory culture and an audience for fostering engagement in the climate change conversation: YouTube and its associated comment board. The methodology section first tackles how the affordances and constraints of using YouTube comments as data necessarily shape the methods as well as raise tricky ethical questions. It then draws on a brief analysis of audience theory to situate the activity of audiences on YouTube comment boards.

An analysis of the contexts, texts, circulation, and reception of these satirical comedy segments comprise Chapter Five, “Oliver and Kimmel Correct Climate Change Disinformation.” After examining the events and changes in the climate change narrative that form the context of their segments, and performing a close reading of their examples of satirical climate change comedy, I argue that both Kimmel and Oliver, to various extents, use comedy and satire, but that they mainly rely on accurate information to correct misrepresentations of climate change. A snapshot of their online reception also discloses that whereas centrist media tend to appreciate the satire of Oliver and Kimmel, even using it to reset the public agenda, conservative news sources often express that comedy, politics, and science definitely do not mix.

Chapter Six, “Reception of Oliver’s and Kimmel’s Videos on the YouTube Comment Boards,” analyzes the reactions to all four videos by examining their associated YouTube comment boards. It first presents an overview of the comments for both case studies, addressing their dominant themes and other commonalities. All four comment boards, which have much higher reply densities than what is normal for videos on controversial subjects, reveal the potential of satirical climate change to engage audiences

and motivate conversations. Drawing from all four examples of satirical climate change comedy from both case studies, I argue that the comment boards reveal a struggle between accepting and rejecting Kimmel's and Oliver's messages about the validity of the scientific consensus and the seriousness of the climate crisis. On the one hand, people use the comment boards to affirm the climate change problem, praise Oliver and Kimmel's messaging, debate the causes of American climate change denial, and provide impromptu science lessons. On the other hand, despite these positive discussions and interactions, the YouTube comment boards also disclose the longstanding effects of climate change disinformation campaigns. This chapter ends by examining what negative reactions to these videos can teach us about creating effective climate change communication strategies and avoiding the notorious backfire effect.

Chapter Seven, "The Perils and Potentials of YouTube for Climate Change Communication," first addresses YouTube's climate change denial problem before considering satire and YouTube as correctives for climate change disinformation. This chapter also argues that the YouTube comment board may act as a virtual public forum where people interact with those they might never meet in the face-to-face world. The conclusion ends with possible methodological and theoretical extensions of my research.

Whereas Chapter Eight includes the list of references for all of the chapters, Chapters Nine and Ten, the Appendices, include figures mentioned in the chapters. They also include detailed prose tables scrutinizing the comedic approaches of John Oliver as well as tables providing more insight into the data behind the analyses.

2 (Mis)Representing Climate Change

This chapter contextualizes my project by discussing some of the main factors that have contributed to misrepresenting climate change. First analyzed in 2.1 are the norms and routines of commercial journalism and science reporting that problematize their accurate climate change coverage. 2.2 explains the term “manufactured scientific controversy” before introducing some of the key sources of climate change skepticism: conservative media (2.3), planned misinformation campaigns (2.4), and the policies of recent presidential administrations (2.5). These factors and causes, which are not in order of importance, overlap and impinge on each other. However, they are separately discussed to stress how the problem of climate change misrepresentation has several possible and interconnected causes and, accordingly, no one clear solution. This chapter ends by arguing, in 2.6, that disinformation and confusion about the climate change crisis have exacerbated two main gaps that stall public acceptance of and action on climate change policy.

2.1 The Routines of Commercial Journalism

Although the early “ideals” of journalism include an obligation to the truth, loyalty to citizens above private interests, comprehensive and proportional coverage, cross-checking and verification, an independent check on power, and journalists exercising their conscience (Kovach & Rosensteel, 2001), others have argued that journalism has long failed to live up to these lofty expectations. In the most polemical arguments, the failures of journalism are connected to its unhealthy focus on profit and its increasing commercialization, with Upton Sinclair (1912) lamenting, over a century ago, that

newspaper stories are mere “bait to bring the public to the hook” of advertising (p. 254). Others have similarly contended that journalism has frequently been less concerned with shining a hot light on the world’s affairs and more preoccupied with selling stories and making a profit (McManus, 1994). Bennett (2016) contends that commercial journalism, until the 1980s, had a relatively strong commitment to investigative reporting, one attributed to a wall between journalism and advertising as well as the conviction that the news was not supposed to generate profit. Others note, however, that when mass media became increasingly concentrated (Bagdikian, 1992; McChesney, 2015; Bennett, 2016), a trend enabled and then accelerated in the deregulatory neoliberal era (Hesmondhalgh, 2006), newspapers and news programs started to soften their news for wider publics while not offending profit-driven editors and advertisers. The goal of profit-driven journalism, certain critics say, is not to educate the public, inspire critical thinking, or motivate civic engagement (Gitlin, 1980), but to dazzle people with spectacle (Boorstin, [1961]1992); Postman, 1985) and provide the illusion of democracy (Bennett, 2016). Probably the most cynical critique of journalism’s commercialization appraises the mass media as a multi-leveled propaganda disseminating machine (Herman & Chomsky, 1988). That is, rather than tell the truth or inform citizens, commercial journalism is about enforcing consensus and appeasing the status quo.

The constraints of commercial journalism, according to critics, may impede its coverage of complex, slow-moving topics. Rather than provide expensive, comprehensive coverage, commercial journalists often replace complex, multi-perspective, informative narratives with “timely, terse, easily described, dramatic, colorful, and visualizable” (Scheuer, 1999, p. 112-113) vignettes and easily digestible soundbites (Bourdieu, 1998;

Hallin, 1992; Scheuer, 1999) that skim the surface of information while appeasing both the public's need for news and advertising interests. Instead of complete stories that inform, the public digests a series of fragments, or information in “sketchy, dramatic capsules. These disconnected reports make it difficult to see the causes of problems, their historical significance, or the connections across issues” (Bennet, 2016, p. 38). These fragments, especially when they are produced by commercialized legacy press (Bennet, 2016) are easily recycled and exchanged so that readers repeatedly consume an empty, homogenized diet of news.

Journalism's commercialization also affects the framing and biases of the news. Media sociologist Herbert J. Gans (1980), after analyzing coverage of *CBS Evening News*, *NBC Nightly News*, *Newsweek*, and *Time* as well as investigating the structure of news organizations, their criteria for choosing stories, and journalists' relationships with their sources, concluded that commercial journalists rarely take “their audiences into account when selecting and producing news” (p. 246). He continues to explain that although journalists “had a vague image of the audience, they paid little attention to it; instead, they filmed and wrote for their superiors and themselves, assuming, as I suggested earlier, that what interested them would interest the audience” (p. 247). According to Gans, several factors inhibit journalists' connection to their audiences, such as a distrust of the audience and the tension between professional journalistic standards and commercial incentives. Because of this disconnect, journalists base their reporting on their assumptions of external reality—what they see as enduring American values of ethnocentrism, altruistic democracy, responsible capitalism, small-town pastoralism, individualism, moderation, and order. That is, despite their appearance of impartiality, journalists implicitly embed

these enduring values in their stories, reflecting what they think Americans want to hear rather than what they need to hear. Gans later builds on this critique of journalism in his *Democracy and the news* (2004), which explores how a weakened news media impacts democracy. Here, he investigates how the proliferation of news sources has diminished the role of the contemporary journalist. The dynamic of journalism, according to Gans, is the assembly line and its products are mainly publicity for the president and political elites. In this media environment in which profit and publicity are prioritized, hard-hitting investigative journalism has difficulty flourishing.

Others agree that journalism, with its conservative agenda and its pro-corporate bias (McManus, 1994; McChesney, 2015), often avoids stories that investigate controversial topics, challenge the status quo, and make the powerful uncomfortable: systemic poverty, inequality, racism, wealth disparity, the bloated military budget, and so on, are often sidestepped subjects (McChesney, 2015). (To this list of avoided topics, I add those stories that negatively interrogate technology, explore environmental crises, or critique tenets of the American way of life, such as freedom, gun ownership, and consumption.) Likewise, in his criticism of the news as “a mass-produced consumer product, bearing little resemblance to history book images” (2016, p. 36), Bennet (2016) identifies four information biases shaping news coverage: personalization, dramatization, fragmentation, and the gamification of politics. When it adopts the personalization bias, American news downplays the “big social, economic, or political picture in favor of the human trials, tragedies, and triumphs that sit at the surface of events” (p. 36). Instead of investigating the problem of systemic poverty, for instance, the media will focus on a human-interest story with a strong character overcoming or attacking destitution. Dramatization, the second

bias, is the media's preference for reporting simple stories over thoughtful analysis or problem-solving. News dramas prefer crises, the present tense, and strong characters. The third bias, fragmentation, is the tendency for news stories to be decontextualized and disconnected from each other, so that publics can rarely analyze problems or see the bigger picture. Lastly is the bias of "politics as a game" (p. 39): political situations are reported as games, horse races in which there are winners and losers. These dramatic daily updates, such as polls and the like, act as red herrings that deflect from the candidates' platforms and policies. The cumulative result of these four biases is that contemporary journalism provides people with an illusion of information, rather than its reality (Bennett, 2016). The populace is uninformed and democracy is threatened.

Some also see science reporting, once a separate entity, as also falling victim to commercial journalism's ties to the market and its corresponding biases. Science journalism peaked in the 1980s and 1990s when there were budgets (with accompanying planned losses) and separate departments dedicated to science writing, but when newspaper revenues declined dramatically in the 1990s, many major papers laid off staff, fired their in-house science writers, and dropped their health and science sections (Siles & Boczkowski, 2011). CNN, for instance, cut its entire technology and science team in 2008 (Siles & Boczkowski, 2011). As a result of budgetary cutbacks, news outlets often replaced trained science writers with journalists assigned to science beats, who may have had no specific training; or with generalists, who had minimal interest in the topics they were covering (Bucchi, 2002). Journalists assigned to science beats also inherited weightier workloads, relied heavily on press releases, and appropriated habits of commercial journalism that were inappropriate for science reporting, such as consulting familiar

experts rather than investigating their assigned stories (Mazur, 1981; Bauer & Gregory, 2007; Ashwell, 2016). This habit of sourcing does filter out the nonsense, but it also “selectively passes stories that are particularly appealing to the scientific and journalistic gatekeepers” (Mazur, 1981, p. 114), such as striking developments in health, medicine, and technology as well as reports of natural disasters (Pellechia, 1997, p. 55). Science journalists, who shifted their focus to episodic event-centered stories and novel technological advances, reduced their coverage of complex, slow-moving stories (Mazur, 1981; Nelkin, 1987; Pellechia, 1997). In short, the new and the dramatic become prioritized in science reporting.

Commercial journalism’s routines and biases, then, are a bad fit for the complex topic of climate change, an intricate problem with environmental, social, economic, and political layers. The climate change problem is impossible to unpack in a 30-second sound bite. Accurate and comprehensive coverage of climate change also uncomfortably challenges certain enduring American ideals (Gans, 1980), such as altruistic democracy (the government is not acting fast enough on climate change and/or creating mitigation policies); responsible capitalism (climate change denial is a product of corporations and special interest groups); individualism (it is necessary that climate change policies impinge on some personal liberties foundational to the American way of life); moderation (many parties who have acted too temperately have accelerated climate change; it is too late for a moderate solution); and order (both climate change and the policies to address it will result in some disorder to American institutions and lives). Accepting and acting on the climate change problem, then, means confronting these enduring ideals.

Furthermore, until recently, climate change may have had limited coverage because it was a slow-moving story that was not particularly vivid or visualizable to those American journalists who prefer their news stories to have dramatic angles, striking imagery (Feldman, 2017), exciting characters, a focus on “crisis over continuity, the present over the past” and a story with a clear beginning, middle, and end (Bennet, 2016, p. 37). That is, the story of climate change, which began well over a century ago has an awkwardly long narrative arc with no conclusion (or immediate solution) in sight. Also, graphs of long-term temperature changes and images of slowly rising seas do not make for captivating graphics, so the media avoids these and instead recycles dramatic images, such as that of the all-too-familiar polar bear stranded on a block of ice.¹ But the reuse of these dramatic images may have the opposite effect: making people think that climate change is exaggerated.

Of the traits inherited from commercial journalism, the journalistic bias that is the most damaging to accurate climate change coverage and to the public understanding of the climate change crisis is the norm of balance and objectivity. This norm gives the oppression that journalists are not only reporting official perspectives, but also objectively and responsibly covering both sides of an issue without privileging one of their sources or weighing in on the controversy. When they do so, journalists, detached and politically neutral, are offering “the best available representation of reality” (Bennett, 2016, p. 156).

¹ Ironically, the plethora of recent extreme “first in a century” weather events and ecosystem disasters, which allow journalists to report “the face of climate change” (Mann, 2018) “in real time,” have made climate change mediagenic, melodramatic, if not catastrophic.

The norms of objectivity and impartiality do work well when journalists report on knowledgeable officials who are split on an issue in which there is legitimate conflicting evidence, such as the health benefits of marijuana use. However, impartiality malfunctions when of the two conflicting sides, “one or both represent narrow interests or misleading positions, resulting in ‘balanced’ news that contains serious information biases” (Bennett, 2016, p. 155). Or to put it another way, “[b]alancing an official view with an opposition perspective may give the outward appearance of impartiality,” yet it has an ideological function of “subtly influenc[ing] the debate” (Anderson, 1997, p. 49). In short, when journalists respectfully report the facts of a climate change expert alongside the opinion of a maverick scientist or an inexperienced naysayer holding highly unorthodox and incorrect views, when they “perform their own neutrality” (Benkler, Faris, & Roberts, 2018, p. 356), they contribute to the flaw of balance as bias (Boykoff & Boykoff, 2004). Chris Toumey (1996) has also discussed the related phenomenon of pseudosymmetry in which the mass media, by reporting on the opinions of one contrarian scientist, give the impression that he represents a large (and important) group of dissenters. Balancing is problematized when the authorities debate each other in front of journalists acting as politically neutral observers who offer no critical feedback nor take stands on well-supported scientific truths. As a result, both views on complex scientific matters appear equally official and believable: the debate is the most accurate interpretation of reality. When publics read stories on these complex scientific matters, they may conclude that the science is controversial and consensus still undecided (Antilla, 2005). The result of these flawed practices is the public perception that the science on an already decided issue (fluoridation of water, vaccinations, climate change) is still unsettled and, therefore, debatable.

Besides demonstrating balance as bias, televised debates about climate change also demonstrate Bennett's aforementioned bias of *dramatization*. That is, televised climate change debates usually involve a divided split screen (symbolizing the two competing equally valid perspectives on climate change) in which two well-known figures (a well-known climate-change skeptic and an informed scientist, who is often Bill Nye) dispute climate change. Bill Nye is probably the most familiar participant, having taken on Tucker Carlson, Mark Morano, Marsha Blackburn, along with others. Despite his worthy intentions and reasonable arguments, Nye often gets belittled or interrupted in these dramatic, unmoderated debates, making him resemble the loser, the one holding the exaggerated, alarmist view about climate change. Along with dramatization, televised disputes also inevitably frame climate change in terms of conflict and competing interests: the economy vs. the climate, American values vs. environmentalism, freedom vs. government overreach, the present vs. the future, American vs. the world, and so on. They also reinforce that news is about "competing narratives rather than a judicious search for the truth" (Rabin-Havt & Brock, 2012, p. 11). When these debates constitute the main extended coverage of climate change, they attract viewers while exacerbating public skepticism, if not outright confusion. Televised debates misrepresent climate science and depict the climate change consensus as untrustworthy.

The journalistic norm of objectivity has also helped popularize and legitimize "maverick scientists" (Anderson, 1997, p. 49) and notorious naysayers (Mark Morano, Fred Singer, Judith Curry, William Soon, and so on) who otherwise might have faded into the background along with their climate change fabrications. Take the example of Mark Morano, who has used his on-air debates with Bill Nye to become a popular conservative

spokesperson for climate-change skepticism. He lends his reputation to the documentary, *Climate Hustle*, which describes climate change concern as an alarmist liberal hoax, a hustle in which all the science is not yet in. Even if Morano and other naysayers have no scientific credentials, their celebrity combined with the slender pool of climate change sources (Mazur, 1981) makes journalists turn to them more frequently, giving them more media time to debate climate change. And when they engage in these debates, they become more recognizable, so the cycle continues. Furthermore, conservative mass media audiences tend to be distrustful of elites, so when the vocal celebrity scientist (like Bill Nye) or prestigious professor (Neil deGrasse Tyson) argues with the outsider scientist or naysayer (Mark Morano or Dr. William Soon), the latter may appear more sympathetic, regardless of the credibility of their claims (Dearing, 1996, p. 355). In my opinion, the norms of objectivity not only do a disservice to accurate climate change communication but are grossly out of place in our polluted information ecosphere in which journalists, as the last line of defense against mis and disinformation, should do all that they can to distinguish fact from conjecture.

Recently, the main networks have been remiss in their fair and comprehensive coverage of climate change. Whereas three major networks (ABC, CBS, NBC) ran 147 stories on climate change in 2007, only 32 appeared in 2010 (Klein, 2011). After using Nexis to locate and the transcripts of television coverage on four nightly news shows and four Sunday programs between January 1, 2016, and December 31, 2016, followed by content analysis, Kalhoefer (2017) indicts ABC, CBS, NBC, and Fox for failing “to discuss climate-related ramifications of a Clinton or a Trump Presidency until after the election.” In fact, in 2016, these networks aired a “combined 50 minutes of climate coverage on their

evening and Sunday news programs—96 minutes fewer than in 2015—a drop of about 66 percent” (Kalhoefer, 2017). ABC, followed by Fox, had the least amount of climate coverage in 2016, with six and seven minutes, respectively. This minimal attention is both ironic and suspicious considering the numerous extreme weather events tied to climate change, the signing of the Paris agreement, and 2016 being (then) the warmest year on record. Nonetheless, “ABC, CBS, NBC, and FOX failed to discuss climate-related ramifications of a Clinton or a Trump presidency until after the election” whereas all networks ignored climate change’s impacts on public health (Kalhoefer, 2017). PBS was the only network to discuss both the influence of the next president on climate change policy as well as the various impacts of climate change (extreme weather events, plants and wildlife, and the economy). Whereas most of the networks minimized climate change reporting, they also aired five segments that included unrebutted climate change deniers associated with President Trump’s team (Kalhoefer, 2017). The journalistic obsession with the horse race between Clinton and Trump (the “politics as a game” frame) (Bennett, 2016, p. 51) and their competing scandals pushed accurate climate change coverage to the background.

2.2 The Manufactured Scientific Controversy of Climate Change

A key strategy in climate change disinformation campaigns, one appropriated by the Fox News Channel and the other doubt-manufacturers mentioned in sections 2.3-2.6, is creating a manufactured scientific controversy or *manufactroversy*. According to Ceccarelli (2011), a scientific controversy is “manufactured” in the public sphere when an “arguer announces that there is an ongoing scientific debate in the technical sphere about

a matter for which there is actually an overwhelming scientific consensus on the corresponding issue” (p. 269). “Mercenary scientists,” the most influential creators of manufactured controversies, regularly abuse “balancing norms” and make “appeals to values such as open-mindedness, freedom of inquiry, and fairness” (Ceccarelli, 2011, p. 212). They exploit these tactics in order “to force scientists to enter a balanced debate on a scientific claim that has already been decided in the public sphere” (Ceccarelli, 2011, p. 207). The goals of the manufactured scientific controversy are reopening a settled issue and creating doubt in the minds of the populace.

Purveyors of manufactured controversies exploit the fallibility, skepticism, and controversies central to the scientific process itself; they also manipulate the critique that paradigms, which are always unstable, necessarily constrain science. Paradigms control scientific research by insulating the “community from those socially important problems that are not reducible to the puzzle form” (Kuhn, 1969, p. 370), limiting the types of questions worthy of exploration, and creating insiders and outsiders. Science has also been referred to as a social field with its own “distribution of power and its monopolies, its struggles and its strategies, interests and profits” (Bourdieu, 1975, p. 19), one in which researchers allocate themselves to fields yielding the greatest return of prestige (p. 20). It is theorized that scientists with greater resources and social capital end up controlling the disciplinary field, deciding which discoveries matter and which researchers to promote (Bourdieu, 1975; Latour, 1986). When the previously mentioned criticisms are misappropriated and used without their philosophical underpinnings by those outside science studies, they may result in the cliché of unethical scientists who are more interested in fame and funding than with objective research. These scientists conspire to censor

dissenting voices and to propagate alarmism so that they can secure their research funding. According to this line of thinking, anyone associated with creating or publicizing climate change research, such as Al Gore, is also an unethical, money-grubbing elite.

Climate-change naysayers not only manufacture doubt about climate change, but also appropriate other damaging tactics. For instance, placing unreasonable expectations on scientific proof, naysayers exaggerate minor uncertainties to discredit theories: if there is not 100% agreement on the causes of climate change, there is still room for debate. They also focus on how agreement or dissent with scientific theories creates insiders, who are accepted by the scientific community; and outsiders, who are rejected by it. That is, skeptics and naysayers re-characterize (or perhaps a better term is *rebrand*) their small minority of experts—that important 3% who doubt that global warming is human-caused—as maverick or outsider scientists. Instead of being scorned, so say the naysayers, these scientists should be welcomed, for “science advances only when heroic dissidents push at the frontiers of normal science” even if their alternative research is silenced by the mainstream scientific community (Ceccarelli, 2011, p. 209). Dr. Judith Curry and Dr. Richard Tol, frequent critics of the Intergovernmental Panel on Climate Change (IPCC) reports, have regularly positioned themselves as “outsider” scientists whose consensus-challenging research is rejected by a hegemonic scientific community more interested in preserving order and acquiring research grants than in knowing the hard truths. Curry, who believes that the earth is warming but that there is no solid evidence that this change is largely human-caused, repeatedly contends that she is being censored and silenced by her scientific peers: “I am broadly concerned about the slow death of free speech, but particularly in universities and also with regards to the climate change debate” (2014).

2.3 Fox News and its Climate Change Problem

One major force contributing to climate change disinformation and depicting climate change as a controversy is the Fox News Channel, currently the most watched television network for “news” (Katz, 2019). The Fox network had been gaining in popularity, averaging more viewers in the 24-hour-day in October 2018 than in October 2016, the strategic month before the last election. In October 2018, “FNC marked 28 consecutive months as the No. 1 basic cable network in prime time,” maxing out at 1.7 million total viewers a day in the 6 a.m. - 6 a.m. Total Day daypart (Katz, 2018). To put this number in perspective, MSNBC’s and CNN’s maximum daily viewers were 1,575,000 and 931,000. Whereas October 2018 saw *Hannity* as the most watched cable news program, for the seventh month in a row, *Hannity* and the *Rachel Maddow* show have been exchanging top slots since then. Although MSNBC has been gaining on Fox, at the time of this writing, FNC still leads MSNBC in both the total day and prime time viewers: 1.889 million vs 1.553 million; and 3.169 million vs. 2.641 million (Katz, 2019).

The Fox News Channel is definitely worthy of attention. Originally holding the motto “fair and balanced,” which has since been replaced with “Most watched, most trusted,” Fox started out, in 1996, as a conservative alternative to what Rupert Murdoch saw as a liberal-dominated commercial media. During its birth and management under Roger Ailes, the network grew increasingly more opinionated and right-partisan in its reporting; and more pandering to conservative political elites. Brock, Rabin-Havt, and Media Matters (2012) have documented a “marked increase in politically motivated disinformation” on the network since 2009 (p. 11). Recognizing Fox’s commercial success and political influence, Pence (2019) has examined the network’s programming to analyze

how its iconoclastic news style allows it to brand itself as a counter-elite network that coalesces the working class and the business class: the “real” Americans. Fox has successfully managed to blend far-right values and economic interests and to sell conservatism as a working-class concern.

Perhaps the best explanation of Fox’s contribution to perpetuating climate change denial resides in the model of Benkler, Faris, & Roberts (2018). Their model divides the political landscape into three main actors: political elites, media outlets, and the public. One of Benkler et al’s core assumptions is that members of the populace consume news not only to inform themselves but also to confirm, rather than challenge, their views. Politicians also familiarize themselves with and appear on the same media as their voters in order to build bridges to their constituents. Lastly, media have the choice of delivering news that confirms their viewers’ and politicians’ worldviews and identities or offering discomforting news that aims for accuracy, avoids partisan statements, and distinguishes fact from opinion.

Their model describes two structurally distinct media systems that co-exist in an asymmetric media landscape; these systems have different incentives, mechanisms, and practices. Or to put it another way, Benkler et al (2018) offer “a stylized description of the relationships, interactions, and feedback loops between elites, media, and the public” (p. 76). According to these authors, one media system consists of left to right-of-center publications spanning the political spectrum. This system, which is anchored by legacy news outlets, abides by “truth-oriented norms” or a “reality check” dynamic; that is, it functions by delivering neutral but often critical coverage, by balancing sensationalism with truth seeking, by separating news from opinion, by delivering both confirming and

disconfirming news to viewers, and by dampening overly partisan statements. Although the authors admit that bias-confirming news is also in ample supply on the left, players in this media system regularly police themselves, checking for false information; the penalties here are also greater for lying, especially by legacy news sources and by politicians.

In contrast is the right-wing insular media system, from which 30% of Americans get their news. It operates by a different dynamic: the propaganda feedback loop. In this system, mechanisms work to reinforce, rather than check, partisan statements. The media delivers favorable identity-confirming statements while policing a different type of deviance: criticism of its own coverage as well as the politicians it promotes. Viewers in this media system place far more trust in identity-confirming sources, doubting media that uncomfortably challenges their beliefs and values. Because outlets in this network are designed to reinforce rather than check each other, mistruths and propaganda amplify and spread easily. There are also no disincentives for lying, even by politicians, who must also deliver identity-confirming information that appeases the media and their constituents (Benkler et al, 2018, p. 33). All the players in this loop—reporters, political and industry elites, audiences—look for, support, cite, and exchange media that confirms their ideologies, even if that media is questionable or obviously false. In this dynamic, people rarely move outside their echo chambers to recognize alternative viewpoints on complex matters, such as climate change, because if they do so, they are punished accordingly.

Benkler et al (2018) also argue that despite its visible role in the 2016 elections, the radicalized right ecosystem did not just *appear*; American conservatives had been moving further to the right since the 1970s. Moreover, long before Fox, Rush Limbaugh set in motion the propaganda feedback loop still dominating today's right-wing media

ecosystem. The internet simply allows greater accessibility to (and visibility of) this ecosystem. Fox also excels at fertilizing, distributing, and amplifying questionable stories circulating on the internet, such as the notorious deep state (Rabin-Havt, 2016, p. 5).

Of concern here is how Fox News's role in the propaganda feedback loop enables its distortion of climate change: the network downplays or ignores the problem of climate change, disparages climate scientists, depicts climate science as unsettled, and regularly transforms climate change into a controversy (Huertas and Adler, 2012). Fox also abuses the tactics of false balance and cherry-picking to make these two persistent arguments about climate change: scientists are still in disagreement about its causes; and the effects of climate change are grossly exaggerated. It often features climate-change denying maverick scientists and politicians, whose opinions reinforce each other while assuaging their viewers. The network also regularly depicts climate change as a liberal, alarmist cause threatening American economy and its viewers' values. Because of the linkages between Fox News and other radicalized right sources, this coverage gets recirculated, republicized, exaggerated, and legitimized in the popular conservative talk shows of Sean Hannity and Tucker Carlson; in the more extreme programs of Alex Jones and Rush Limbaugh; and in the fringe websites of Gateway Pundit and Breitbart. In other words, the Fox News Network plays a significant role in disseminating climate change denial propaganda.

I must take a moment to pause on *fake news*, a problematic and indistinct term. Players in the propaganda feedback loop have regularly re-appropriated the term "fake news" to apply it to all leftist media that criticize conservatives and their ideologies. Fake news has also been classified and re-classified according to its complexity of information and its intention to deceive (Holnan, 2016; Alcott and Gentzkow, 2017; Wardle, 2017) or

according to its goals of satirizing an event/person, making money, or promoting an agenda (Barclay, 2018). Because of the blurriness of the term *fake news*, I adopt Benkler et al's (2018) terminology—propaganda, disinformation, bullshit, and misinformation—for the range of fabrications in the polluted media ecosphere. They explain that propaganda is “designed to manipulate a target population by affecting its beliefs, attitudes, or preferences in order to obtain behavior compliant with [the] political goals of the propagandist” (p. 29). One of the goals of propaganda is to “create controversy where none previously existed” in order to stall progress and undermine democracy (Rabin-Havt, 2016, p. 6). Benkler et al (2018) also define disinformation as “the dissemination of explicitly false or misleading information” (p. 32). They also adopt Harry Frankfurt's definition of bullshit: communication that has no regard for the truth and is driven by profit (p. 32) while describing misinformation as unintentionally misleading information that is not politically motivated (p. 24).

In a crowded information environment in which people rarely have time to vet stories, these various types of mistruths merge and spread, aided by digital technology. When propaganda and disinformation that climate change is an alarmist, liberal hoax or a controversy are repeated in the right media ecosphere, and then recirculated and shared on the internet, they develop the appearance of truth and damage Americans' understanding of this environmental crisis. One such example is James Delingpole's June 6, 2017 story “Global Warming is a Myth,” published in *Breitbart News*. Although self-proclaimed investigative journalist Delingpole has no expertise in climatology, he nonetheless cobbled together cherry-picked charts and misquoted facts from scientists to expose that 58 articles published in 2017 state global warming is a “myth.” The author's main goal is to convince

readers that there is really no consensus on climate change (politically motivated propaganda); he also creates fabrications in a story written for profit (bullshit) and to further his reputation. Delingpole is also a force in the climate skepticism world; he has a podcast, an editorship at Breitbart London, and acknowledgement as an internet reporter.

2.4 Conservative Thinktanks and Planned Disinformation Campaigns

Along with far-right news sources, there are other important players with a long, tangled history of promoting climate change mistruths and depicting climate change as a controversy. That is, before Fox News, planned disinformation campaigns propagated by a small cabal of scientists, by powerful special interest groups associated with the gas and fuel industry, and by several conservative thinktanks (CTTs) have long been central to climate change denial (Mooney, 2005; Oreskes, 2010). For instance, one of the more recent and most powerful CTTs is the American Legislative Exchange Council (ALEC), a lobbying group funded by thirteen energy companies and the Koch brothers. Along with promoting a “teach both sides” approach to climate change, ALEC is working on repealing various pieces of EPA legislation, supporting the Keystone XL Pipeline, and reducing net metering. In other words, ALEC directly opposes climate change mitigation policies and alternative fuel technologies.

Those in disinformation campaigns have regularly appropriated tactics from the tobacco industry’s 1950’s plan for muddying the link between cigarette tar and cancer (Oreskes and Conway, 2010; McIntyre, 2017). The process for manufacturing doubt is a straightforward but expensive one: exploit the skepticism or lack of finality in the scientific

enterprise itself, find and fund your own experts, promote these experts to the media, convince the media there are two sides, use public relations and governmental lobbying to promote your side, and capitalize “on the resulting public confusion to question whatever scientific result you wish to dispute” (McIntyre, 2017, Location 445). Or to put it in another, more cynical way: the key is getting paid experts to produce fake research that is converted into talking points and memes that get repeated on television, social media, and paid advertising campaigns (Rabin-Havt, 2017, p. 7).

Several doubt-mongering strategies are apparent in the famous 1998 memo sent out by the American Petroleum Institute in response to the Kyoto protocol. Members of the organization indicated that they would undertake a national media relations program to generate doubt about climate change. Their aim was creating media coverage that would reflect “balance on climate science and recognition of the validity of viewpoints that challenge conventional wisdom” (memo qtd. in Hoggan & Littlemore, 2009, p. 43). The memo stated that “victory will be achieved when average citizens ‘understand’ (recognize) uncertainties in climate science” and that “recognition of uncertainties becomes part of the ‘conventional wisdom’ ” (UCS). Their campaign will also have succeeded when the media understands uncertainties in climate science and “those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality” (UCS). Once this uncertainty becomes recognized by both industry and media leaders, these people will dutifully promote it, spreading doubt among the populace. The populace will then continue to spread the uncertainty message.

The Oregon Petition Project (1998), targeted directly at the Kyoto Protocol (1997) and the growing scientific consensus on climate change, also exemplifies the coordination

and depth of another climate change propaganda campaign. Lead by Arthur B. Robinson, a scientist with a long history of fringe research (Sourcewatch), the OPP collected mailed-in petitions and over 31,487 signatures. The petition's goal was to make a firm statement rejecting the Kyoto Protocol for its supposed harmful effects on scientific progress, the environment, technological advances, and "the health and welfare of mankind." Before they signed, the respondents had to agree with this following dubious statement:

There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate. Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth.

Accompanying the petition was a persuasive cover letter from physicist Dr. Fred Seitz and an article by Robinson, Robinson, and Soon (2007), the latter mimicking the look, font, and style of the short official reports produced by the *Proceedings of the National Academy Journal* (Grandia, 2009). This "research" article, meant to convince fence-sitters to sign the petition, concluded that there is no evidence that increased atmospheric carbon dioxide will cause "unfavorable changes in global temperatures, weather, or landscape" (p. 12). In other words, the article strongly urged that there is not only no legitimate reason to reduce the production of CO₂ or other greenhouse gases but also that doing so will harm developing nations. The Heartland Institute, which has a Fred Seitz award for important, yet contentious, research on climate change, helped back this petition. The validity of the Oregon petition's claims and signatures have repeatedly been disproven (Hebert, 1998; Grandia, 2009). Very few experts had PhDs in climate science (only 39); the credentials of those who signed have not been confirmed; and various pranksters signed as both

celebrities and fictitious characters, such as Dr. Geri Halliwell, John S. Grisham, Michael J. Fox, and even Perry Mason (Hebert, 1998; Grandia, 2009).

Anti-climate change publications, which have a thirty-plus year history, are also key to spreading disinformation and propaganda that depict climate change as a controversy. According to Dunlap & Jacques (2013), there were 108 climate change denial books published between 1982 and 2010 by both major and obscure publishers. They were joined by self-published books written by those with no climate change expertise, a trend that accelerated between 2007 and 2010 (p. 703). Whereas the Heartland Institute's Sherwood Idso's *Carbon Dioxide: Friend or Foe* first appeared in 1982 to suggest the positive "greening" effects of excessive CO₂, the other 107 books appeared in 1989 and afterwards (Dunlap & Jacques, 2013, p. 703), following on the heels of a United Nations formed panel on climate change. However, an alarming 59% of these texts emerged between 2007-2010, a publishing frenzy attributed to pushing back against several dramatic events in the climate change narrative. These events include the instantiation of the Kyoto Protocol (2005); 2006's documentary *An Inconvenient Truth*; and the 4th IPCC Assessment Report, which stated that the evidence for human-caused global warming was unequivocal. Not surprisingly, the majority (72%) of climate-change denying books are associated with conservative thinktank publishers, "with the Cato Institute publishing five, the Heartland Institute publishing four, and the CEI, the Marshall Institute, the Hoover Institution, and the U.K. Institute for Economic Affairs each publishing three" (Dunlap & Jacques, 2013, p. 707). The other 28% are printed independently by the authors themselves or by other publishers. Even though 42% of the books' authors have no PhDs (p. 710), and most have no climate change expertise at all, these texts nonetheless provide persuasive critiques of

climate science while propagating the myth that anthropogenic global warming is a hoax (Dunlap & Jacques, 2013, p. 713). These climate-change denying tracts, however, rarely get critiqued or debunked by scientists, who are perhaps unaware of their existence or who do not consider them as scholarship worthy of review (McKewon, 2012).

One such book, 1993's *Eco-sanity: A Common-Sense Guide to Environmentalism*, which argues that greenhouse gases are harmless and that halting global warming is unfeasible, helped to launch the Heartland Institute's anti-climate change policy campaign. Since then, the Heartland Institute has branched out by targeting specific audiences, such as high school students. In a 2012 leaked memo (Littlemore, 2012), the HI proposed a high school curriculum strategy that would counter "principals and teachers" who "are heavily biased toward the alarmist perspective. From this memo came the 2015 book *Why Scientists Disagree about Global Warming: The NIPCC Report on Scientific Consensus* and a companion DVD, which were most recently sent to the first 25,000 science teachers in March 2017. This 122-page publication, which has all the trappings of an official science white paper (bullets, headings, references, and so on), asks readers to "consider the possibility" that climate science is still unsettled and that a "vibrant debate is taking place among scientists." Accordingly, the book begins with a chapter entitled "No Consensus" and ends with "Policy Implications."

To review some of the tactics of planned disinformation campaigns, I want to focus, temporarily, on how this publication dismisses John Cook's bibliometric study "Quantifying the Consensus on Climate Change" (2013). The article, which began as a citizen science project, recruited readers from the United Kingdom, the United States, Canada, Australia, and other countries, who examined over 12,000 abstracts from peer-

reviewed articles on climate change and global warming. The readers searched for the following types of statements: “explicit or implicit endorsement of human-caused global warming, no position, or implicit or explicit rejection (or minimization of the human influence)” (Skeptical Science). Of the 4,000 papers taking an implicit or explicit position on global warming, 97.2% of them attributed it to human causes. By May 2014, Cook’s article had 200,000 downloads (Vaidyanathan, 2014); at the time of this writing, it has had over one million. According to the Skeptical Science website, which tracks the media coverage of this bibliometric study, in the first year it was published, CNN mentioned the study at least four times, Al Jazeera three times, and ABC twice; over 150 newspapers positively cited the study; and scholars have cited this article 963 times. Cook’s study also followed and cited previous studies of scientific consensus (Oreskes 2004; Anderegg et al, 2010; Doran & Zimmerman, 2011) and preceded others (Stenhouse, Maibach, and Cobb, 2014; Verheggen et al, 2014; Carlton, Hill, & Prokopsky, 2015; Cook et al, 2016). In other words, these studies clearly prove that there is a consensus on consensus; they also forced the commercial media to address the scientific consensus on AGW.

Despite the significance of Cook’s article and the overwhelming evidence for the scientific agreement on climate change, the radicalized right still continues to discredit consensus studies and counter them with alternative “facts.” One such attack appears in the Heartland Institute’s previously mentioned NIPCC report. In Chapter One, the authors falsely claim that consensus studies are flawed and misleading, that no survey or study demonstrates scientific agreement, and that many prominent scientists disagree with the (Intergovernmental Panel on Climate Change) IPCC’s conclusions (p. 7). The authors then condemn all consensus studies based on four main flaws: their methodology (grounding

their arguments on abstracts, which don't reflect the paper's findings); their exclusion of "legitimate" scientific articles that disagree with the consensus; the questionable expertise of the authors of the abstracts; and the lack of credentials of the report's authors (some were *merely* PhD students). Ironically, most of the authors of the NIPCC report reveal a lack of basic knowledge about science as well as about composing and publishing scientific publications. They also use ad-hominem attacks, ignoring Cook's credentials and calling him a "blogger" who grossly overestimated the anthropogenic global warming consensus because the abstracts he studied didn't contain bold-faced "Climate change is happening" statements. According to the NIPCC's authors, the idea that humans are accelerating global warming is just a "suggestion" or "speculation" in an ongoing scientific debate. They further discredit Cook's study with several unreliable sources: Richard Tol's (2014) blog from *The Guardian*, Montford's (2013) white paper for the Global Warming Policy Foundation (a UK thinktank founded by denier Nigel Lawson), a 2014 Friends of Science (founded by Petroleum geologists) report, and an article by Legates, Soon, and Monkton (affiliated with the National Center for Policy Analysis and the Heartland Institute).

In fact, when *Why Scientists Disagree about Global Warming: The NIPCC report on Scientific Consensus* took center stage on the Heartland Institute's website in 2015, it referred to the controversy over global warming as "the most consequential public policy debate." To substantiate this claim, the website also linked to a lengthy interview with physicist Willie Soon, who advocates that the "modulator of all things climactic" is actually solar radiation (an opinion also held by Alex Jones) and that the fear of CO₂ "will be remembered as the greatest mass delusion in the history of the world" (Soon, 2018, p. 12)—one publicized by such "propaganda-scientists" as Bill Nye and Neil deGrasse Tyson.

2.5 The Effects of Past and Current U.S. Administrations

As is evident from the preceding paragraphs, unravelling the web of forces involved in discrediting climate change and the scientific consensus is an overwhelmingly frustrating task. The last contributor to misrepresentations of climate change and the associated skepticism are the policies of recent and present administrations. According to Chris Mooney (2005), author of *The Republican War on Science*, climate change doubt accelerated during the Republican Party's "lurch to the right" (p. 35), beginning with Ronald Reagan's distrust of scientific claims about acid rain's effects, which made the authority and expertise of scientists suspect and therefore open to investigation by non-experts. Although researchers published important climate change work in the 1990s, the United States took another step backward with President George W. Bush (Mooney, 2005). In March 2001, President Bush did not send the Kyoto protocol to Congress, a move announcing U.S. withdrawal from the accord. The Bush administration then "began to align itself with an orchestrated global disinformation campaign" (Pilz, 2008, p.73), which involved editing climate science documents, hamstringing climate scientists with bureaucracy, hiding climate research from the public, attacking individual scientists, magnifying uncertainty, and relying on handpicked anti-climate change scientists (Hahn, 2017; Mooney, 2005). The Union of Concerned Scientists (2010) has also observed that the Obama administration did make some moderate progress on climate change policy, but the recent administration has reversed these changes.

That is, the current U.S. administration has launched a grievous campaign of actively undermining science. In 2017, The Union of Concerned Scientists began keeping a record of these attacks. When the group began the investigation, it warned, "The Trump

Administration and 115th Congress have sent clear signals that they intend to dismantle science-based health and safety protections, sideline scientific evidence, and undo recent progress on scientific integrity” (“Attacks”). However, in 2018, that very same ominous opening had switched from the future to the past tense: “The Trump administration have been actively dismantling . . . and undoing recent progress on scientific integrity.” In other words, their dark hypothesis quickly became a darker reality. First, the president and his team have tried to distance themselves from the Obama administration’s progressive environmental policies by rolling back Obama-era regulations in the name of harnessing more oil and gas resources (his American Energy First policy). His administration has also denied the seriousness of climate change and the scientific consensus; it has scorned the effects of climate change by ignoring mitigation and promoting a plan of adaptation. It has also attempted to muzzle scientists by reducing their funding, reorganizing departments, cutting conferences, and prohibiting interviews with the press. Over at *National Geographic*, Greshko et al (2018) have also created a constantly updating graphic that tracks President Trump’s actions against tackling climate change as well as his rollbacks of environmental protections.

The president himself has also manufactured doubt about human-caused climate change. In an October 2018 interview with *The Associated Press*, which, among other subjects, addressed his stance on climate change, the president rather oddly confirmed—and without providing any evidence—that the planet’s air is the cleanest it has *ever* been. He also asserted his reluctance to create policies that would “sacrifice the economic well-being of our country for something that nobody really knows”; in other words, he repeated the mistruth that scientists are unaware of climate change’s real causes while using the

familiar tactic of pitting the economy against the environment. When addressing scientific consensus, the president likewise maintained that there are “scientists on both sides of the issue. And I agree the climate changes, but it goes back and forth, back and forth. So we’ll see.” On whether climate change had reached an irreversible point, he responded, “Some say that and some say differently. . . . I have a natural instinct for science, and I will say that you have scientists on both sides of the picture.”

In the previous excerpts, President Trump iterated several dangerous trends. Along with his exaggeration about the country’s clean air and his reliance on the economy/environment conflict frame, he appropriated other climate-change denying tactics. He voiced the suspicion of, if not outright denial, of scientific expertise, the belief that uninformed opinions about science are as relevant and as weighty as facts, the mistruth that there is still a debate regarding the reality of climate change, and the myth that all the relevant evidence is not yet in. These faulty representations of the state of climate science and the seriousness of this environmental crisis, especially when they are from the commander-in-chief, further contribute to public skepticism. When his and his fellow Republicans’ climate change statements get recirculated and repeated in right-of-center news sources and other disinformation campaigns, confused Americans may not know what to believe about climate change or to what authority to heed for accurate climate change information.

Though the greatest number of President Trump’s over 7000 fabrications (*Washington Post Fact Checker*) have concerned immigration, one of his most repeated climate-related mistruths is that the United States should withdraw from the Paris Accord because it is a “one-sided” agreement that is killing American jobs. On June 21, 2017, the

president stated, “The Paris Agreement would’ve cost America millions of lost jobs and billions and billions of lost dollars, and put us at a permanent economic disadvantage.” On Dec. 13, 2018, he upped the economic ante with this exaggerated claim: “I was the one that kept us out of the Paris Accord. If I was in the Paris Accord, we would be paying trillions of dollars, trillions of dollars for nothing, and I wouldn’t do that” (*Fact Checker*). The president finally made good on his promise to withdraw from the Paris Agreement by making his official notice on November 4, 2019, a decision that means the earliest the U.S. will be out of the accord is November 4, 2020, one day after the next president is elected.

In short, President Trump and his administration have undertaken a campaign of censorship and disinformation to downplay, if not erase, the effects of climate change from the government agenda, from the language used by government employees, and, perhaps, from the American mind.

2.6 Climate Change Skepticism and the Two Gaps

Inadequate, irresponsible, and inaccurate journalism, disinformation campaigns, and the anti-climate-science efforts of various administrations have not only generated climate-change skepticism, but have also contributed to widening the two climate change perception gaps. That is, a substantial gap exists between what conservative and liberal Americans believe about the climate change and the necessary policies to address it. There is also another divide between the actual scientific consensus on the causes of climate change and the public’s perception of this consensus.

Pew Research, which has dedicated sections of its regular Political Typology surveys to the American population’s perception of the causes of climate change and of the need to

enact government policy to address it, explains the first gap. Section Seven of its 2014 Political Typology's survey (Global Warming, Environment and Energy) reveals that those identifying as solid liberals (78%) accept that climate change is caused by human activity whereas 75% of steadfast conservatives and 71% of business conservatives (35% of the total population) are the most openly skeptical about the reality of climate change, believing "there is not solid evidence that the Earth is warming" because "it is just not happening," "they don't know yet," or "the evidence is insufficient" (p. 69). A subsequent question in this poll discloses a similar dichotomy on the government's responsibility for protecting the environment, with a conservative majority (75 and 70% respectively) affirming that the government "had gone too far." On the other hand, 96% of solid liberals declare that the government should act "by any means necessary" (p. 70). According to its later 2017 survey, the public remains "deeply divided along partisan and ideological lines in its opinions about environmental issues." 71% of core conservatives and 50% of country-first conservatives believe there is no solid evidence of global warming because "it is just not happening or there is not enough information" (p. 67). On the other hand, just 1% of solid liberals agree there is no evidence of global warming whereas 95% attribute it to human activity (p. 67). There is equally stark division on the importance of climate change policy: 92% of Core Conservatives and 70% of Country First Conservatives affirm that stricter environmental policies will harm the economy, but 100% of solid liberals think these policies are worth the cost (p. 68). These percentages are higher in 2017 than in 2014, which means that political polarization between die-hard conservatives and liberals has grown. After President Trump's continuous refrains of the negative economic impacts of

the Paris Accord, I hypothesize that there will continue to be increased resistance to environmental policies.

The second gap exists between the public conception of the scientific agreement on climate change and the actual consensus of scientists. That is, many Americans still believe that the scientific community disagrees that climate change is anthropogenic. According to a 2012 Pew Poll (Kohut et al, 2012), less than 50% of the American population thinks that scientists unanimously agree that humans are causing global warming: “45% say scientists agree while 43% say they do not” (p. 3). Understanding of the scientific consensus actually *decreased* since 2006. A more recent overview on SkepticalScience.Org (2018) reveals that “there is no consensus,” is the fourth most popular myth about climate change, with “the climate’s changed before,” “It’s the Sun,” and “It’s not Bad,” taking the top three spots. The website Skeptical Science (2018) further quantifies this gap: only “16% of Americans realize that the consensus [on climate change] is above 90%.” Closing this gap is crucial because an acknowledgement of consensus is a gateway belief that affects “other climate beliefs and attitudes including policy support” (Cook et al, 2013). A crucial step in climate change action, then, is getting people not only to accept consensus, but also to recognize that those in agreement have climate change expertise whereas skeptics generally have none. Inappropriate journalistic habits, disinformation campaigns, and fake news underplay or refute this scientific consensus, keeping this gap open and stalling action on climate change.

Because of all the forces contributing to climate change misrepresentation as well as the previously mentioned gaps, the situation appears dire. That is, intervening on and correcting climate change disinformation seem impossible. However, the next chapter

makes the argument that popular culture, in the form of satirical climate change comedy, may evaluate irresponsible climate change coverage, target these disinformation campaigns, and communicate accurate climate change information.

3 The (Potential) Corrective of Satire

The previous chapter assessed the insufficiencies of journalism in accurately covering the climate change problem. It also focused on the role of disinformation campaigns and presidential administrations in downplaying the scientific consensus on AGW, circulating climate change propaganda and disinformation, and exacerbating public skepticism. When this questionable and/or biased climate change coverage gets repeated and magnified in the internet's various echo chambers, and the corresponding publics try to make sense of confusing information, they may envision climate change as an ongoing debate, a topic mired in the conjectural status (Ceccarelli, 2011).

This chapter analyzes satire's role in targeting dangerous fabrications and budging climate change out of its conjectural status. Satirical climate change comedy has the potential to invigorate climate change discussion, engage people, and promote civic action. The persuasive ability of all satire, however, is problematized by its potential for misinterpretation—its slipperiness—and by its relationship to its audiences. Whereas 3.1 provides a brief overview of satire, 3.2 and 3.4 address satire's tone, targets, and form. The subjects of satire's slipperiness and its relationship to authority comprise 3.4. In sections 3.5 and 3.6, satirical television's correction of commercial journalism and its investment in accurate climate change coverage are investigated.

3.1 A Brief Overview of Satire: From Horace to Satire TV

The slipperiness of satire goes all the way back to its roots. Satire is not so much a distinct, recognizable genre, but a method or a technique *applied to a genre*: specifically, satire is the “art of diminishing or derogating a subject by making it ridiculous and evoking

towards it an attitude of amusement, contempt, scorn, or indignation” (Abrams, 2005, p. 275). Historicity and topicality and “referentiality and factuality” are also essential conventions of satire (Feinberg, 1967, p. 3; Bogel, 2001, p. 11). That is, satire must have a clear referent or target to be effective; otherwise, it degenerates into mere sarcasm or invective. Satire’s main weapon is laughter, which may be lighthearted, derisive, uncomfortable, venomous, and so on, depending on its targets and tone. This is the traditional definition of satire—an approach transcending and often uncomfortably pushing the boundaries of the comic to attack a subject, provoke laughter, and effect change.

In Linda Hutcheon’s (1994) more detailed schematic classifying the types of ironies (tropes in which the implicit meaning of words differs from their explicit meaning), satire resides at the top of her scale because of its complexity and its emotional charge. She explains that satire is both an assailing and aggregative irony. As an assailing irony, satire must have a target; it confronts weaknesses, injustices, and the corruption of people, values, institutions, rituals, and so on; in doing so, it challenges power, authority, and notions of respect. In this role, satire is a “kind of protest, a sublimation and refinement of anger and indignation” (Cuddon, 1999, p. 780). At its worst, however, the negative function of assailing irony is that of bitterly and mercilessly attacking a target without the desire to amend it (Hutcheon, 1994, p. 54). The approach of satire—tearing something down—becomes the end in itself. Nothing is corrected and people turn away from the message, often in anger and helplessness.

Satire also draws people, aggregating audiences according to their interpretation of the target and appreciation of the satirist’s message. That is, satire is often either inclusionary or exclusionary. When satire is inclusionary, it has a positive charge, creating

communities who understand the targets and therefore desire to amend them. Satire's negative charge, however, also creates groups of insiders and outsiders. Insiders align themselves with the satirist, feeling privileged to be in on the joke; outsiders, on the other hand, may feel confused when they don't comprehend the joke or victimized and abused when they are its target (Hutcheon, 1994, p. 55-56). Satire's ability to create insiders and outsiders also encourages audiences to develop "an emotional connection with its subject matter and with each other" (Feldman, 2017, p. 325), whether that connection is based on acceptance, resistance, confusion, anger, and so on.

These conflicting features of satire have deep roots in western literature. Satire was originally associated with those who wrote formal poetry, such as Marcus Terentius Varro, who mixed prose and verse in his Menippean satires (117-26 BC); and Lucilius (60s AD), who wrote hexameter verses that assessed both public and private vices (Abrams, 2005). In fact, the list of early Greek and Roman verse satirists is almost too long to count. Much later, Samuel Johnson, John Gay, and Alexander Pope further perfected verse satires whereas Swift honed the satirical novel and essay in his *Tale of a Tub* (1704), *Gulliver's Travels* (1726), and *A Modest Proposal* (1729). All of the previous mentioned writers composed in the Augustan period (18th century), often recognized as the golden age of satire (Ogborn & Buckroyd, 2011, p. 14). This era gets the aforementioned name because it bred satirists whose "purpose was to protect this culture from abuse, aberration, and corruption" (Cuddon, 1999, p. 783). Satire's aim has always been to wound if not tear down—both what is loved and despised—in order to improve and rebuild: the goal is eventually protecting and improving civilization and human behavior. In the 19th and 20th centuries, the novel became the prime vehicle of satire (Abrams, 2005), weaving together

comedy and moral questions (Ogborn & Buckroyd, 2011, p. 14), such as in Jane Austen's pointed critiques of social norms and the British gentry.

In contemporary culture, satire has transformed from a method used for mainly literature and art to an approach suitable for popular culture and a wide range of texts. Until recently, television had an erratic relationship with satire. *That Was the Week that Was* (1962-1963), a television comedy program that parodied public affairs, politicians, and the establishment, started the satire boom in the United Kingdom; the irreverent tone of *Saturday Night Live* (1975-present), particularly its Weekend Update segment, which reported on yet satirized current events, helped to popularize satire in the United States. Gray, Jones, & Thompson (2009) further trace the resurgence and corresponding mainstreaming of satire to *The Simpsons* (1989-present), which, they contend offers more "irreverence" than "explicit and cutting-edge political satire" (p. 25) along with potent critiques of both social norms and the changing television landscape. Aired on the Fox Broadcasting Network, the first episode of *The Simpsons* (Dec. 17, 1989) jovially targeted mean-spirited bosses, department store Santas, wealth disparity, greyhound racing, disobedient children, dysfunctional parenting, and the stereotypical role of the father as breadwinner. It was the popularity of *The Simpsons* and the appetite for political and social commentary which made content creators and other networks take notice of and invest in satirical programming (Gray, Jones, & Thompson, 2009). These authors contend that Comedy Central (1991-present) was also instrumental in making television the new home of satire. In particular, the airing of Bill Maher's *Politically Incorrect* (1993-1997) garnered the fledgling network "critical acclaim, wider cable carriage, and brand identity"

(Gray, Jones, & Thompson, 2009, p. 26). (Maher's program later moved to ABC from 1997-2002).

After Maher's program, Comedy Central launched the immensely popular and politically incorrect *South Park* (1997-present), branding itself as a channel where viewers could find edgy programming combining comedy and politics. Other satiric juggernauts that emerged from Comedy Central were *The Daily Show with Jon Stewart* (1996-2015), *The Colbert Report* (2005-2014), and *Chappelle's Show* (2003-2006). Stewart's and Colbert's programs have gone by the labels of "new political television" (Jones, 2010, p. 5) as well as "satire TV" (Baym, 2009). I will use the term *satirical comedy* (SC), which opens up the approach to satirists following in the footsteps of Stewart and Colbert, such as John Oliver, and to others, like Jimmy Kimmel, who combine satirical skits and segments with more traditional stand-up comedy. Satirical comedy is also appropriate for the changes in tone—from harsh to lighthearted to ridiculous—that the segments of Oliver and Kimmel frequently navigate. Since these programs began, satire has continued to evolve to incorporate other media and genres, such as websites, blogs, vlogs, memes, and posts on social media.

3.2 Satire's Form, Tone, and Slipperiness

An understanding of how Oliver and Kimmel appropriate satire for their climate change messaging requires a brief analysis of satire's structure or form as well as its tone and targets. Interpreting satire involves recognizing and understanding the difference between a speaker or a text's explicit messaging (what the persona or surface meaning of a text appear to be stating) and implicit messaging (what the persona or a text is

criticizing/targeting). Satire's form may also be direct or indirect. In formal direct satire, the speaker adopts a thick persona/mask, which is at various levels of removal from both himself and his audience, such as Jonathan Swift did in his pamphlet *A Modest Proposal* (1729) in which he took on the guise of a humble economist vetting solutions for Ireland's dire economic problems. After contextualizing the seriousness of Ireland's situation and performing cost/benefit analysis, Swift's economist proposes that breeding babies as a food source is the most rational solution to generating products, markets, and wealth. Previously, in parliament, Swift had debated policies to address Ireland's issues, but to no avail. He wrote this biting critique to grab people's attention and express his frustration about the lack of government action. Behind the mask, which often drops during the proposal, Swift's targets are several: British politicians, wealthy landowners, the taxation system, the penchant for luxury goods, and the form of economic proposals themselves. His speaker is also a target: he exemplifies those economists who propose inhumane, unethical solutions; as well as those Protestants with minimal sympathy for Irish "papists." The humble economist's impassioned tone and plan are so convincing that, in my experience as an instructor, some readers have believed Swift's explicit message and been revolted by his cannibalistic proposal.

In the same vein as Swift, Stephen Colbert (*The Colbert Report*, 2005-2014) likewise used direct satire. On his program, he convincingly played a caricature of a hyper-partisan conservative news pundit who had an uneasy relationship with the truth. For instance, in his " 'Poor' in America" segment from July 26, 2011, Colbert opens with a reference to Jesus, "who said the poor will always be with us," before switching to a Fox News report questioning the actual destitution of the American "poor." The report states that in "poor

households,” 99.6% have refrigerators and 81.4% have a microwave. Colbert segues from Fox to a new Heritage Foundation report entitled “Air Conditioning, Cable TV, and an Xbox: What is Poverty in the United States Today?” After pinpointing how the Fox News story showed an image of an aisle of flat screen TVs at Best Buy to anchor its story about the American poor, Colbert cites the Heritage Foundation report’s conclusion that the poor have an incredible amount of “stuff” “in their homes: luxuries like ceiling fans, DVD players, answering machines, and coffee makers.” Colbert returns to the Fox pundit who then discredits the exaggerated statistic that 12% of American children go to bed hungry; it is more like 2%, which Colbert affirms “is the perfect amount.” Colbert, taking a cue from right-wing reformers who want to reduce government waste, then advocates deconstructing the programs that assist the poor (the dam) because they have obviously worked to stop the flood of poverty. Continuing this metaphor, he argues that if the river of poverty comes back, we can just throw people life preservers . . . or refrigerators.

Although there is much laughter in this segment, behind his mask, Colbert has several biting targets. In his own caricature and in his commentary on Fox coverage, he mocks conservative pundits who are obsessed with minimizing the seriousness of America’s poverty problem and with representing the impoverished as lazy, undeserving people who waste their government aid on luxuries. By beginning with Jesus, Colbert also parodies those conservatives who regularly reference him but who lack empathy, and whose attitudes towards the poor are anything but Christian. Lastly, he targets all those who want to eradicate government programs assisting the poor, such as conservative thinktank groups like the Heritage Foundation. Behind this caricature, Colbert expresses genuine concern about growing poverty in America—those 12% of children who are hungry at night—and

the lack of empathy that Americans have towards their fellow citizens. The sympathetic comedian also points his finger at those who think the poor must be beyond destitute and miserable to qualify for government assistance. Nonetheless, because of Colbert's adeptness at mimicking the over-the-top delivery and inflammatory ideas of far-right pundits, conservative viewers have occasionally failed to distinguish between his implicit messaging and his explicit messaging, so that they believe Colbert is confirming, rather than satirizing, their own values (Feldman, 2013).

In contrast to Colbert's character, the satirist's persona may be a thin mask, their voice seemingly closer to, if not indistinguishable from, the speaker's. As a stand-up comedian, John Oliver has a manic delivery and significant experience with political commentary, so when he parodies a pundit on *Last Week Tonight*, it seems as if we are watching Oliver loosely adopting the form (and the leeway) of punditry while remaining himself. Jimmy Kimmel has so honed his everyman delivery that audience members may believe that when he speaks, they are hearing Jimmy, not the celebrity. In contrast, long-time fans may regard his politicized comedy and satire as "inauthentic" or a betrayal, especially those viewers who followed him from his previous frat-boy comedy program *The Man Show* (1999-2004). For example, on January 19, 2018, Jimmy Kimmel presented his "halftime tribute" to celebrate the mid-way mark of the current presidency, which involved a montage of awkward President Trump interviews, ironic segments from celebrities praising the leader, and even a final skit with the president added to Mount Rushmore. On the Facebook page for *Jimmy Kimmel Live!*, his more conservative fans reacted negatively, rebuking the comedian for his recent criticisms of President Trump, Kimmel's partisan politics, and his supposedly rapidly waning talent. One particularly irate

person remarked that the comedian had no credentials to mock the president: “Jimmy Kimmel, the biggest highlight of your career will be the Halloween Candy skit. Nobody cares about your political opinions, bigotry, or slanderous insults. Go be a writer for the NY Slimes.” Others condemned Kimmel’s continuing obsession with the president. What these Facebook posters seemed to forget is that Kimmel is wearing a mask, however seemingly transparent, and though he may indeed be disgruntled with President Trump, the leader’s antics also make for effective comic material.

Direct and indirect satire are often combined in the speaker’s and/or writer’s approach. When speakers and their texts present ludicrous characters or events and/or parody the formula(e) of a specific genre, such as the news program or the late-night talk show, they are using indirect satire. Jon Stewart, for instance, appropriated the set-up (loud introductory music, flashy headlines, an elaborate stage, a large desk with papers, a globe turning backwards, and so on) of a late-night news program (indirect satire) to adopt a reporter’s persona, address an audience, and disparage current events and news coverage (direct satire). John Oliver also adopts the style and persona of a pundit, but without the obvious simulacra of a news program and studio. Regardless of whether it is direct or indirect, satire has several tools at its disposal: “exaggeration, the use of obscenity, scatological humor, the creation of imaginary societies or imaginary universes, alternative versions of history and beast fables” (Gilmore, 2018, p. 12). (One Michigan Tech professor seemed somewhat appalled at Oliver’s recent trend of using more bawdy humor, but lowly jokes have often been associated with satire.) These tactics, combined with its persuasive message, ideally hold a mirror up to the world and reveal a “sort of higher truth” (Gilmore,

2018, p. 177). *The Daily Show*, for instance, holds up a mirror not only to Fox News but also to all commercial journalism.

Complicating satire's message and making it a risky form of communication is its tone, which encompasses both the stance of the speaking voice/persona towards the world and the presence/absence or tenor of its humor. Horatian satire gently pokes fun at human foibles; its speaker looks on their subject matter, whether it is human folly, corrupt institutions, hypocrisy, and so on, with more wry amusement than anger or with a quasi-cynic approach (Abrams, 2005). This type of satire does regularly introduce ethical problems, but it is more concerned with moderation and realistic expectations (Abrams, 2005, p. 285) than with taking a firm moral stance. That is, Horatian satire may lack a consistent ethical stand and offer conclusions that are often inevitable, or, at worse, toothless and morally bankrupt. If the tone is harsh and the laughter muted or nonexistent, we are in the world of Juvenalian satire, which is meaner, scornful, and more pessimistic about correcting humanity's failings. In its pure form, Juvenalian satire belongs to a "serious moralist who uses a dignified and public style of utterance to decry modes of vice and error which are no less dangerous because they are ridiculous" (Abrams, 2005, p. 277). After attacking human frailties, this speaker usually concludes that humanity, their values, and their institutions are fundamentally ruined and unsalvageable. If there is laughter in Juvenalian satire, it often a grimace from those standing at a safe distance, watching the world disintegrate. Juvenalian satire's hardened social critic wants to wound (Holbert et al., 2011, p. 192) and to push the audience out of fun (Eastman, 1936). At its dark end, this type of satire may merge with nightmare, as it does in Orwell's *1984*. At best, then,

Juvenalian satire results in persuasion; at worst, a visceral response of horror or cynical apathy that makes audiences turn away from the issue, rather than confront it.

Whereas John Oliver, who can be incredibly biting, often seems to migrate between the two approaches, I consider Kimmel a comedian who, when he addresses serious subject matter, most obviously takes the approach of a Horatian satirist. On September 3, 2019, Kimmel delivered a long (eleven minute) opening monologue satirizing both the previous evening's democratic debates as well as the current president. In the segment, Kimmel sarcastically compared the structure of the debate—each candidate had only 45 seconds on the clock—to the rushed format of game shows. To mock the number of Democratic candidates and their positions, he aired opening credits of a new 80's style program *Dem's the Breaks*, which provided quick snapshots of the various candidates, all characters in the show. Kimmel then switched to targeting President Trump's recent behavior by supposedly recapping one of the moderator's tougher debate night questions: "If elected, how do we know you won't lie about everything all the time and draw on weather maps with a sharpie?" Kimmel, here, was the Horatian satirist moving between seriously targeting pressing public affairs issues (the perplexingly large field of Democratic candidates, the upcoming election, the president's erratic behavior) and keeping the audience entertained: he made jokes about Biden's age, Bernie's yelling, and "Baby Pete Buttigieg" (who is caught in a carnival machine). He incorporated crass visual and aural gags (Drunk Donald Trump and the "censored" debate). Although Kimmel jested, he also targeted the current dismal state of political rhetoric, the president's attack on high-efficient lightbulbs, and his recent decision to dismantle Obama's clean water bill. The president has "rolled back protection of the water, air, and endangered species and public land. All he cares about is

rolling back what Obama did. I'm surprised he didn't order Sasha and Maleah back into the womb."

As can be seen from my description of Kimmel's segment, one of the criticisms of the approach of Horatian satire is that its lighthearted humor, which may not be rigorous or pointed enough, may not inspire action. Hart (2013) as well as Hart & Hartelius (2007) have levelled this charge against Jon Stewart: that, on *The Daily Show*, he was not an effective satirist because his critiques did not encourage actual change, but stirred only complacent cynicism and wry laughter. I disagree with these evaluations. Keeping the audience in fun, such as Kimmel does and Stewart did, makes their messages both memorable, which means more people may engage with their satire and perhaps share them. That is, Horatian satire's softer edge and broader humor may increase its virality and potential audience.

Juvenalian satire is substantially more risky. To show the limits of its approach, I want to focus on Michelle Wolf's caustic monologue at the 2018 White House Correspondent's Dinner. The WHCD, a black-tie event, has always been an odd venue to roast the press, but the tradition of comedians delivering speeches there goes back at least thirty years. At this event, Wolf played the Juvenalian satirist who targeted the current presidency, Congress, the Republican Party's support of Roy Moore, Fox News and its Bill O'Reilly scandal, CNN, the legacy press, religion, Democrats, Hilary Clinton's poor campaign strategies, overpaid pundits, and several Republican politicians. She was an almost equal opportunity offender when targeting both major political parties: "Democrats are harder to make fun of because you guys don't do anything. People think you might flip the House and Senate this November, but you guys always find a way to mess it up. You're

somehow going to lose by 12 points to a guy named Jeff Pedophile Nazi Doctor. Oh, he's a doctor?" At the same time, she supported citizen activism and the "Me Too" movement while keeping the Flint water crisis at the top of the public agenda.

Throughout her speech, Wolf was also very aware of her audience and the peculiar context of the event. Acknowledging her harsh criticisms and the lack of laughter, she deadpanned that those who invited her probably should have done more research. Wolf pushed several boundaries in this speech, even making an abortion joke, which triggered an onslaught of Federal Communication Commission (FCC) calls (Berkowitz, 2019); she acknowledged that many in the audience were publicly against this procedure "unless it's the one you got for your secret mistress." Her remarks became especially cutting when she landed on the media's irresponsible coverage of President Trump and their role in getting him elected: "He's helped you sell your papers and your books and your TV. You helped create this monster, and now you're profiting off of him." Her concluding line targeted the travesty the media should be covering: "Flint still doesn't have clean water."

The reaction to Wolf's divisive speech reveals the risks of Juvenalian satire. In the crowd, many of her jokes fell flat, receiving no response at all or, at best, beleaguered smirks and frowns. The White House Correspondents' Association, profoundly critical of her tone and her supposedly inappropriate content, released a press statement the following day. The WHCA affirmed "that Wolf's monologue 'was not in the spirit' of the group's mission to call attention to the value of a free press as well as great journalism" (Steinberg, 2018). Twelve years prior, Stephen Colbert also delivered a controversial speech at the same venue, one in which several of his comments also hit too close to home for President Bush and for the attending White House correspondents. What particularly stung was

Colbert's critique of the media's dismal investigation of President Bush's rationale for waging war on Iraq. When the secret weapons of mass destruction that drove the Iraqi War were not discovered, Colbert criticized the media for not investigating the matter further and for failing to accuse the president of acting rashly. Like Wolf, Colbert was accused of being unamusing and avoiding his duties as a comedian: he "failed dismally in the funny person's most solemn obligation: to use absurdity or contrast or hyperbole to elucidate—to make people see things a little bit differently" (Cohen, 2006). Although this charge of Colbert "failing to be funny" reveals a misunderstanding of Juvenalian satire's dark tone, it nonetheless points to another weakness, or perhaps riskiness, of its approach: pushing some people away and into anger and disgust.

Some of the criticisms of Wolf's monologue also point to another feature that makes all approaches of satire a tricky form of communication: its ambiguity. That is, as carefully as the satirist composes their intended message, the audience, relying on their own contexts and experiences, may not interpret it as encoded. The audience may not receive the satirist's desired message (Niskar et al. 2006 qtd. Bore and Reid, 474). The audience may also struggle with the satirist's implicit and explicit messaging: distinguishing between the surface and deeper messages (Spicer, 2011, p. 19). Even if most of the satirist's meanings are clarified, the audience might still reject them, whole or in part, if the targets or messages conflict with or offend their personal beliefs and values. In Wolf's speech, she was considered out of line for making an abortion joke, mean-spirited comments that targeted the president and his wife, and a long attack on Sarah Huckabee Sanders. After comparing her to Aunt Lydia in *The Handmaid's Tale*, Wolf targeted Sanders' duplicity:

Every time Sarah steps up to the podium I get excited, because I'm not really sure what we're going to get—you know, a press briefing, a bunch of lies, or divided into softball teams. "It's shirts and skins, and this time don't be such a little bitch, Jim Acosta!" I actually really like Sarah. I think she's very resourceful. She burns facts, and then she uses that ash to create a perfect smoky eye. Like maybe she's born with it, maybe it's lies. It's probably lies.

Whereas Wolf was aiming at Huckabee's conservatism, moodiness, penchant for lying, many people missed her marks. That is, they focused on Wolf's comparison of Huckabee Sanders to Aunt Lydia, which they interpreted as a lowbrow remark mocking the former's physical appearance. As a result, many rushed to the defense of the White House press secretary. In a tweet, for instance, Maggie Haberman praised her because she "sat and absorbed intense criticism of her physical appearance, her job performance, and so forth, instead of walking out, on national television." To this tweet, Wolf commented on the misinterpretation by responding, "Hey mags! All these jokes were about her despicable behavior. Sounds like you have some thoughts about her looks though?"

Satire's tendency to assail, aggregate, and create insiders and outsiders definitely applies to the divided reaction to Wolf's WHCD speech. Those targeted by Wolf—those who didn't appreciate being assailed, the targets of her satire—launched an immediate counter-attack on her monologue, calling it a disgrace. Similarly, the White House Correspondents' Association considered reformatting the entire event because Wolf's barbs had also wounded their organization. Representatives of the legacy press, such as Andrea Mitchell and Mika Brzezinski (Heil, "Many," 2018), used Twitter to call for Wolf's apology. All of these groups, who did not appreciate Wolf's biting criticisms, gathered together to attack her. They also alluded to the limits of satire, particularly what subject matter and sting were appropriate.

In contrast, those in on the joke, those supporting her satire, closed ranks, citing the importance of respecting freedom of speech as well as comedy that takes uncomfortable risks. Kathy Griffin one of the first to defend her, noted, “She did what she needed to do—and as a female, look, you gotta work harder, you gotta jump higher, and she did that—she went there, fearlessly” (Heil, “Kathy,” 2018). Similarly, Rob Reiner took to Twitter to remind everyone about the hypocritical outrage towards Wolf’s speech, especially in light of the current administration: “Trump has so poisoned the atmosphere by attacking the disabled, gold star parents, Muslims, Mexicans, Blacks, women, the press, the rule of law that a comedian who simply tells the truth is offensive? She’s joking. He’s not” (Heil, “Many,” 2018). In other words, those at the White House Correspondents’ Dinner were hypocrites for not defending Wolf’s message, which turned a hard spotlight on the crimes and misdemeanors of the current presidency and the press.

In my opinion, Wolf’s monologue represents one of the best characteristics of satire: a brave and often unrelentless speaking back to power. In her case, the institutions she was standing up to were several: the presidency, commercial media, Hollywood, white privilege, white males, and even the WHCA itself. However, it should be noted that although satire is commonly considered transgressive and counter-hegemonic, it may also be conformist (Day, 2011; Gilmore, 2018). It is theorized that socially conservative satire, which has a long history in Western culture, may work to censure the subversive behavior of those who challenge authority to buttress the status quo (Feinberg, 1967, p. 5). Satire, from antiquity to the present, has also been assessed as sexist and heteronormative (Feinberg, 1967, p. 15). Here I once again recall Jimmy Kimmel’s *The Man Show* (1999-2004). With its skits on hunting, beer-drinking, sports, bikini-clad women, buxom girls on

trampolines, Kimmel and Carolla's program was meant to parody sexist, offensive, loutish male behavior, but often ended up merely celebrating it. Likewise, Kimmel's recurring impersonations of Karl Malone, supposed to lampoon the basketball player's notorious inarticulacy at press conferences, could be construed as racist satire re-instating stereotypes while appealing to his more conservative fan base. Kimmel's work on *The Man Show*, in fact, is often used to question his role as "America's conscience" his newfound awakening, and his constant criticism of President Trump (Flood, 2017).

Satire is also charged with being hegemonic when, rather than motivate the audience to act or to change the offending institution, person, or practice, it acts merely as a safety valve, providing an innocuous release of anger that allows "dissatisfaction with an existing state of affairs to dissipate itself harmlessly" (Gilmore, 2018, p. 185). The harshest critics of satirical comedy often accuse it of substituting political barbs and vague targets for genuine political action, allowing viewers to laugh, let off steam, and offer "a cheap and powerful opiate for progressive angst and rage" (Almond, 2012, p. 30). Others have accused satire TV of being toothless; it distracts people with vague comic targets while disengaging them from public affairs (Fielding, 2012; Almond, 2012). Satirical television programs offer a lonely model of public life, some theorize, in which sarcastic commentary masquerades as civic engagement (Hart and Hartelias, 2007; Hart, 2013). According to the previous theories, audiences watch these programs, laughing at the satirical targets, but their involvement in amending them does not surpass this snickering.

The acceptance of satire becomes more problematic when the messengers are television hosts, who stand in an awkward relationship to authority. Comedians such as Samantha Bee, Bill Maher, John Oliver, and Jimmy Kimmel may use satire to challenge

power—ineffective government, corrupt institutions, influential special interest groups, corporate media, fake scientific controversies, and so on. However, as members of Hollywood's elite, and on profit-driven networks, they are also part of the powerful entertainment business. This tricky stance sometimes results in their satire resisted and their voices challenged by those who feel they are being hypocritically lectured to by liberal Hollywood elites who are far too distant from real people. In other words, as celebrities, their protest against the establishment is often considered suspect.

3.3 Satirical Television Does Journalism

The previous sections assessed how satire's method is a window into both the promises and problems of contemporary satirical television comedy. I contend that despite satire's contentious targets and politics, its ability to create outsiders and insiders, these programs definitely draw audiences to under-represented and misrepresented subjects. The unexpectedness of laughter may break down people's defenses, making them engage with contentious issues, such as climate change, and sharing satirical messages with others.

Researchers contend that satire television may act as an entertaining supplement to, if not alternative for, commercial journalism. These programs often include political content ignored by traditional news programs, such as details about the workings of government, foreign policy, and political representatives as well as longer, complex stories on subjects often ignored by the news (Gray, Jones, & Thompson, 2009; Baumgartner & Morris, 2005). By placing the discourses of entertainment and politics *in conversation with* rather than *in opposition to* each other, what Baym (2005) refers to as "discursive integration," satirical television programs sugar the pill of news, making it approachable,

memorable, and discussable. Or to put it another way, the amusements of these programs, like popular culture, work “as a Trojan Horse to sneak information through to viewers who may be alienated from conventional political and social channels of discourse” (Takacs, 2015, p. 222-223). The memorable comedy and segmented format of these programs also enable people to embed selected satirical content into their own media ensembles and daily routines (Jones, 2001, p. 17). When this satirical content migrates to the internet, it reaches new audiences who further engage with this material by commenting, sharing, and weaving it into the fabric of theirs and others’ lives.

Satire television may also be a corrective to journalism when it addresses commercial journalism’s problematic rituals, fabrications, and gaps in coverage (Cao, 2010). After diagnosing a “crisis of truth” in post-modern journalism, Jones and Baym (2010) have likewise asserted that satirical television programs address this crisis while hearkening back to early ideals of journalism: as a “hot light” exposing relevant issues. In other words, satire TV has appropriated and improved the watchdog function of the legacy press while breaking free from its constraints. Rather than post-modern journalism’s breadth, satire TV’s model is depth—thoroughly investigate one or a few stories to enable audiences to understand them. These programs may have greater latitude in choosing and covering issues along with freedom from journalistic norms, such as seriousness and objectivity (Pew Research Center, 2013; Feldman, 2017, p. 323).

The hosts of these programs deny that they are journalists, but they appear, at least in their preparation and routines, to act as ones. Such is the case with Jon Stewart, who admitted in an earlier NPR interview that *The Daily Show*’s preproduction routines—reading newspapers, watching televised news coverage, looking for issues that had reached

saturation, and having an editorial meeting in the morning—were similar to those of a news program (Davies, 2005). A critic of the press, Stewart also spoke of the lapses in commercial journalism, which he partially attributed to strict deadlines, the pressure of 24-hour news networks, uninformed anchors who are mainly TV people, and the influence of political elites. This combination, he said, creates “a conspiracy of a nonaggression pact, if you will.” In this pact, “talking-point robots, operatives from different political parties,” go on programs, repeating empty talking points that are then accepted and rarely questioned by journalists. When repeated enough, this shallow coverage, which is actually information managed by fiefdoms, comes to stand in for the news. Stewart saw his own program as unabashedly deconstructing media spin, asking tough questions, interviewing politicians, and delivering the truth. Despite his stance about the deficiencies of commercial journalism and his often hard-hitting interview style, Stewart repeatedly denied that he was an investigative journalist; the whole point of his show was transforming this serious content “into fun when its gets on the air” (Davies, 2005).

John Oliver, who also claims to be only a comedian, has regularly addressed stories ignored by mainstream journalism. On June 1, 2014, when Oliver dedicated thirteen-minutes to his first net neutrality segment, he was admittedly compensating for commercial journalism’s inadequate coverage of this overwhelming dull yet important issue. He explains that this subject of net neutrality is so boring, even by “C-Span standards,” that he would “rather read a book by Milton Friedman and have a conversation with a pair of pants.” These ridiculous comparisons draw attention to the boring impenetrability of “net neutrality,” which journalists avoid or downplay to take on more juicy, image-driven stories. The results are that the American populace has no idea what net neutrality involves

or the difference between a regulated and unregulated internet, which allows cable companies to continue scheming and deceiving. Oliver not only takes on this boring, impenetrable subject, but also enlivens it with metaphor: when targeting the cable industry's cronyism, lack of oversight, and unethical monopoly, he compares it to a mega-cartel that the government allows to exist.

After exposing the issue of net neutrality, Oliver reached out to his audience, persuading them to affect policy. Towards the end of his segment, he urged his viewers to act by doing what they do the best: going to the internet and typing madly. "We need you to get out there and, for once in your life, focus your indiscriminate rage in a useful direction. Seize your moment, my lovely trolls, turn on caps lock, and fly my pretties! Fly! Fly!" Viewers immediately responded by flooding the usually underused (and buried) FCC website with 45,000 comments, which slowed it to a crawl (McDonald, 2014). Eventually, the FCC received 3.7 million comments on net neutrality (Kastrenakes, 2014). Today, Oliver's video is still attracting attention, with over 14,508,378 views. The recirculation of Oliver's videos throughout the internet and in social media sites extends their viewership, conversations around them, and their "slow process of shifting perceptions" (Day, 2011, p. 13). (Like the responsible investigative journalist, Oliver eventually followed up this story with another segment: Net Neutrality II on June 2017.) Even though Oliver is disregarding the journalistic norms of objectivity and seriousness, he still covers his topic thoroughly, uses proper sourcing, provides the public with important information, offers "critical perspectives that may be missing from mainstream news sources" (Feldman, 2017, p. 323), directs them to a government website, and persuades citizens *to do something* with his report. Rather than diversionary or harmful to the state of the news, then, Oliver's segment

demonstrates how satirical television comedy engages citizens in issues crucial to upholding the democratic system and provides “meaningful resources for citizenship and civic engagement (Jones & Baym, 2010, p. 279).

3.4 Satirical Television Covers Climate Change

Satirical television has also frequently compensated for the deficient science coverage of commercial journalism (Feldman, 2017, p. 322). When they were on the air, *The Colbert Report* and *The Daily Show with Jon Stewart* addressed more science topics than did commercial journalism (Brewer and McKnight, 2015). These programs also have the potential to represent scientific and environmental issues more thoroughly. Rather than 30-second soundbites wedged between more important stories, these programs offer longer and more involved perspectives on science; they also responsibly represent scientific problems and debates, disarticulating them from falsehoods and uncertainty (Feldman, 2013; Feldman, Leiserowitz, & Maibach, 2011). For instance, in May 2016, John Oliver dedicated a 20-minute-segment from *Last Week Tonight* to critiquing how the rapid fire tactics of news programs make them irresponsibly cover scientific studies, stir up hype and fear, perpetuate myths, and damage scientific literacy. Oliver had the time to conduct a meta-analysis of a journalistic trope, which also indicting commercial news.

It is theorized that satirical television comedy may reinvigorate climate change coverage, draw attention to persistent climate change framing, introduce audiences to climate change scientists, and enhance further engagement in science. That is, the previously mentioned affordances of these programs—detailed coverage of issues, frequent use of jokes, a sarcastic tone, ample popular culture references—may refresh

subject matter and draw previously detached viewers (Brewer & McKnight, 2015, p. 651), such as those disengaged or terrified by climate change coverage. This effect is crucial because common climate-change messaging, which “is temporally and spatially remote from the individual” is a daunting communication challenge (O’Neil & Nicholon-Cole, 2009, p. 360). That is, the problem of climate change often seems so far away, so distant in time and space, that viewers tune out to pay closer attention to more pressing concerns.

Satire’s humor may also be a welcome alternative to traditional messages exploiting fear and shock, which may make individuals feel invulnerable, desensitized, distrustful, apathetic (a common reaction to controlling internal fear), helpless, and skeptical (O’Neill & Nicholon-Cole, 2009). That is, a terrifying discourse of graphic after graphic of increasing temperatures, weather catastrophes, inescapable doom, and stranded polar bears may leave audiences not wary but worn, with the cynical attitude that it is too late for policies to mitigate inevitable climate change (O’Neill & Nicholon-Cole, 2009, p. 363). Alternatively, satirical comedy’s laughter may help audiences manage their feelings of fear and helplessness, which would otherwise alienate them and prevent them from listening, let alone acting (Bore and Reid, 2014, p. 456).

Satire’s affordances are also especially helpful in drawing a wider audience’s attention to global warming, which is often discussed in predictable, polarized ways for liberals and conservatives (Mooney, 2005; Nisbet, “Framing,” 2009; Lakoff, 2014). That is, these programs, given the apparent freedom they have with time and subject matter, may also draw attention to those frames exacerbating public confusion about climate change and antimony towards addressing it. Building on Gamson and Modigliani (1989), Nisbet (“Framing,” 2009) has identified eight basic social frames used in communicating

science policy issues: social progress; economic development/competitiveness; morality/ethics; scientific /technical uncertainty; Pandora's box/Frankenstein's monster/runaway science; public accountability/governance; middle way/alternative path; and conflict/strategy. Whereas frames themselves tend to be value-neutral, framing devices are not. For instance, the frames of public accountability and scientific uncertainty are frequently mobilized to support the teaching of Independent Design (ID) alongside evolution in schools (p. 50-51). When it comes to climate change communication, certain frames are popular: that of scientific uncertainty, popularized by Frank Luntz in the 1990s (the debate on the reality of AGW remains open); the economic frame (policies acting on global warming would economically disadvantage the U.S. and are unfair to its citizens); the conflict and strategy frame (capitalism vs. the environment); the Pandora's box of looming disaster (the catastrophe of climate change is here, so we either need to mitigate it or give up entirely). Scientists and their organizations must 'frame' their messages in ways to engage certain audiences "and fit with the constraints of a diversity of media outlets and communication forums" (Nisbet, "Framing," 2009, p. 43). The right frames may enhance communication rather than exacerbate the already polarized climate change discussion. Nisbet ("Framing," 2009) has added the new frame of climate change as a public health issue (p. 59), which makes climate change less remote and more relevant to new audiences.

Satirical television has frequently confronted and deconstructed these frames and their entailments. Jon Stewart and Seth Meyers, for instance, have repeatedly attacked the controversy frame (consensus on climate change is a hoax). These programs have also tried to frame climate change in alternative ways. On his June 26, 2015 episode, Stewart drew

attention to a new frame (morality/ethics) when he commented on a 200-page Vatican report that cast climate change action not in terms of economics, but in terms of ethical behavior. The pope contended that it is human's moral responsibility to take care of the Earth and those whom the environmental catastrophe will displace.

Satirical comedy programs also publicize and promote important authorities on the climate change conversation: scientific experts who enforce the seriousness of and scientific consensus on climate change. Neil deGrasse Tyson, for instance, has appeared more than a dozen times on *The Daily Show* and *The Colbert Report* to address climate change. He has also traded barbs with scientifically semi-literate or climate-change-denying guests on Bill Maher's *Real Time* (2015, 2012, 2011), whereas climate-change expert and author Bill McKibben appeared on Maher's program in 2017.² More recently, Dr. Benjamin Santer, a self-identified "rogue" atmospheric scientist at the Lawrence Livermore National Laboratory (a government-run institution) appeared on *Late Night with Seth Meyers* to affirm the accuracy and long history of climate science and to respond the repeated false that satellite data have revealed no significant warming in seventeen years. Although he did not use the term "cherry-picking," he noted that skeptics often derive their conclusions from anomalies and carefully selected data. Santer admitted that in these "strange and unusual times," scientists must come out of the shadows and explain their research. He also spoke about the frustration of dedicating his entire academic career to

² deGrasse Tyson, however, has grown more infuriated with America and increasingly pessimistic about mitigating climate change's effects. In his first appearance on *The Daily Show* with Trevor Noah on August 28, 2017, Tyson responded to a tweet in which he lashed out at hypocritical Americans who organize their lives to watch the eclipse, an event predicted by scientists, but they deny the reality of climate change. He condemned Americans for choosing to believe scientific expertise only when it does not conflict with their values.

researching the climate system only to have someone dismiss “all of that scientific understanding as a hoax, as a conspiracy, as worthless, as a contrived phony mess.” He continued to say that when their work is debunked scientists have a choice: “You can either retreat to your office, close the door, and be silent. Or you can choose to push back against ignorance.” Santer not only pushed back but also reaffirmed the credibility of the satellite findings. As these examples demonstrate, satirical comedy programs provide scientists with an important public forum to explain pressing climate change and other research to lay publics. It is a forum they should use to “push back against ignorance” and correct lies and misrepresentations.

Lastly, these programs may enhance learning and promote further engagement in science when the television is turned off. Empirical studies in which researchers surveyed the audience, aired satiric television clips on scientific topics, and then resurveyed the audience later discovered that satire may make scientific subjects, such as those about the environment, more palatable and, therefore, more memorable to wider audiences, increasing attention paid to science and the environment (Feldman, Leiserowitz, & Maibach, 2011, p. 27). Furthermore, because Oliver and his cohorts package information in a non-threatening, entertaining way, their programs may act as intellectual gateways, especially for inattentive viewers, for further engagement in science when viewers step away from the television or computer (Brewer & McKnight, 2015). That is, after viewers watch a segment on science and walk away, they may share it on social media, discuss it with their friends, follow up its sourcing, and so on. Satirical comedy, in short, has a powerful potential for drawing continuing *attention to* as well as *educating people about* climate change.

3.5 Investigating Satire's Approach and Reception

In this chapter, I have historicized, theorized, and problematized satire's approach because going forward (Chapters Five and Six), I will analyze the reception of Oliver's and Kimmel's satirical climate change comedy segments, both on the internet during the first week of their release, and, for a longer period, on their associated YouTube comment boards. Satire's edge, especially when it is applied to climate change misinformation, lends it a certain virality. When satirical comedy circulates in the internet's various public spaces, its crucial climate change messages reach new audiences and provoke significant discussion. In the best circumstances, these audiences recognize the targets (climate change disinformation, President Trump's rollbacks on environmental protections, and so on), and are persuaded of the need to correct them. But satire's slipperiness, especially when blended with the contentious, politicized subject of climate change and other cognitively challenging content, also makes it risky. That is, if audiences misinterpret the structure, institution, or mistruth being criticized by the satirist, or focus on the wrong (or minor) one, they may not understand or appreciate the satire. They might misconstrue the climate change messaging; they also might feel personally victimized. This situation exemplifies satire's negative charge: its creation of insiders, who feel privileged to be aligned with the satirist; and outsiders, who sense they are on the wrong side of the joke. Audiences might also not appreciate being lectured to and targeted by wealthy celebrities, who have questionable authority and credibility as satirists, let alone climate change communicators. All of these possible interpretations of and reactions make satirical climate change comedy delivered by celebrities a formidable but precarious approach.

4 Methodology

This chapter explains and justifies my multi-step methodological approach that combines qualitative and some quantitative methods. I first analyze the methodological challenges and ethical problems of online research in 4.1. The three-step method is explained in 4.2: analyzing the contexts and the texts of the chosen segments of satirical climate change discourse, briefly tracking these videos' online reception over a one-week period, and, finally, examining their reception on their associated YouTube comment boards. 4.2 also justifies the analysis of the YouTube comment board as a type of audience study.

4.1 The Particularities of Online Research

Working with online content, a significant portion of this project, raises specific problems with methods and research design. For online content, researchers might adopt approaches that are too loose or diverse as well as struggle with deciding the boundaries of their projects, such as the time period for collecting data (Giglietto, Rossi, & Bennato, 2012). Although all researchers fret about generalizability and quality standards, these concerns become more worrisome in the newer field of online research (Baym, N. K., 2012). More specific problems involve managing the data, which may be copious and require extensive cleaning (Ignotaw & Michalcea, 2018, p. 12). Analyzing large data sets may also create a need to quantify clicks, likes, and comments, resulting in a too heavy reliance on the abundant, yet sometimes scientizing tools of media software, such as those of N-VIVO (Bazely & Jackson, 2007).

Other challenges involve using search engines that have data restrictions related to privacy concerns or to proprietary information. For instance, Twitter had prohibited academics from sharing corpora built from archives of harvested tweets; Instagram bans the use of automated scraper tools to export material from its site; Facebook's terms and conditions instruct its members that to collect information from other users, they must obtain consent and explain the purpose of using the information (Page et al, 2014, p. 63). Other limitations to online data collection relate to proprietary restrictions on the Application Programming Interfaces (APIs) of websites that use social streaming data but prohibit scraping (Page et al, 2014).

Researchers must also contend with how social media interfaces not only skew and bias data, but also conflict with how researchers may want to collect information. The YouTube interface, for instance, provides only two options when displaying and downloading comments: "newest" and "most popular." These choices replicate how the internet's search engines privilege the most recent and most liked information. Or to put it another way, the researcher must contend with how the internet's ranking algorithms regularly conflate the popular and the good, or, worse privilege the popular over the good (Broussard, 2019, p. 149). Although upvoted comments may be important, they are only one measure of what is going on in the online world. Researchers who want to bypass the YouTube interface and collect all the comments must create their own scraping tools or use open-source ones available on the web.

Analyzing online data also raises tricky ethical concerns. Because the protocol for research is rooted in the medical sciences and in working with human subjects in offline contexts, it is not clear cut or even applicable in all online contexts (Markham & Baym, N.

K., 2009, p. 59). For instance, should online blogs written by cancer patients be treated as freely available texts? Or should the researcher consider these blogs as the products of people whose permission is required? According to the Association of Internet Researchers, because there is not ONE set of recommendations for all online data projects, researchers must carefully consider several factors when determining the ethics of their project (Markham & Buchanan, 2012). They should evaluate online data according to four criteria: the publicness of the information, degree of topic sensitivity, vulnerability of the subject, and level of researcher interaction (McKee & Porter, 2009, p. 97).

For the first criterium, researchers must establish whether data reside in the public domain, whether users have a reasonable expectation of privacy, and whether increasing the publicness of comment is damaging. To address these concerns, they must first study the site's registration and privacy policies as well as the "extent to which privacy mechanisms are activated by participants as the criteria for judging the public or private nature of the material" (Page et al, 2014, p. 65). Elm (2012), who has formally categorized online environments as public, semi-public, semi-private, or private, argues that the public and private are in a constant continuum online (p. 74-75). Therefore, those working online might have to distinguish between public forums in which people freely broadcast their opinions (YouTube) and those sites that people recognize as public (a blog on menopause), but whose users consider a safe(r) place for semi-private conversations between like-minded people (McKee & Porter, 2009, p. 110). Those working with online data must also recognize that they are increasing the exposure of public comment. Quoting online comments "potentially *brings* (emphasis theirs) a readership to a forum which otherwise would not have that readership" (McKee & Porter, 2009, p. 107), such as a personal blog.

Ethics are particularly tricky when researchers mine publicly available data that existed before Google; early internet commenters might not have suspected that due to advanced search engines, data aggregators, and other text-mining tools, their digital traces would be visible two decades later (Elm, 2012, p. 83). People might also object to comments made in their downtime travelling to new audiences who do not align with their original targets (Baym & boyd, 2012). Invisible data mining also has a related deleterious effect: conceptualizing, if not transforming, the internet from a free public space into a place of research, surveillance, and judgment.

The sensitivity of topics, the vulnerability of those in online environments, and the level of researcher interaction are also vital considerations when determining the ethics of online projects. Regardless of the public nature of the website, reproducing sensitive information, taking advantage of a defenseless group, or exploiting peoples' lack of technological experience are all unscrupulous practices (McKee & Porter, 2009, p. 89). Furthermore, when working out the ethics of an online project, researchers must determine whether they are treating the information in blogs, chats, discussion forums, and so on as texts, or as authors and participants in a research study (McKee & Porter, 2009, p. 75). In my project, for instance, the clear distinction between text and authors does not exist, for I migrate between focusing on the content of texts (trends in comments, most upvoted responses, and so on) and focusing on the conversations between and possible motivations of users (conversations, influencers) to analyze what is transpiring on the YouTube comment boards.

An analysis of my project according to the previous concerns and the Office of Human Research OHR protocol reveals that YouTube comments are public documents

written by users who do not expect privacy. Whereas many users take on anonymous identities, others willingly publish their names, treating their privacy quite casually. Even though some of these commenters are potentially identifiable (depending on whether they used pseudonyms, names, and so on), their information has no expectation of privacy and is available in an open, public forum in which observation is taking place [45 CFR 46.102(f)(2)] (ctd. in McKee & Porter, 2009, p. 38). Also, on the subject examined here, climate change satire, people may use questionable logic and inappropriate language, embarrassing themselves in these manners, but they rarely reveal sensitive information about themselves when discussing this topic.

According to the OHR protocol, my project involves “obtaining information about living individuals” (their opinions on climate change comedy and discussions about climate change [45 CFR 46.102(f)]), but it includes no intervention or interaction with the posters of these comments. Although commenters may not have anticipated researcher observation, they do expect observation in general. Thus, for researchers, YouTube comments, like “any publicly available web texts” are off the chart” (McKee & Porter, 2009, p. 39). Lastly, whereas I used an online client (YouTube scraper) to capture the comments, this scraper was adopted merely for convenience. That is, anyone with significance patience and time as well as enough space on their computer could collect these comments with successive screen captures and then type them into N-VIVO. I used an unauthorized open source scraper to collect comments, and present them in a structured

format; however, the Supreme Court has recently ruled that scraping is not hacking.³ In short, the protocol establishes that my project, which contains public information, low topic sensitivity, no degree of interaction, and low subject vulnerability, requires no consent and is legal. This conclusion was also reached by Michigan Tech's IRB, which granted me an exemption for my project.⁴

The last issue with online projects concerns summarizing and explaining them. Online projects usually involve reflexive, interdisciplinary approaches, and complex mixes of quantitative/qualitative methods, but extensive explanations may be omitted or minimized in the clipped style of the traditional methods section (Sandvig & Hargittai, 2015, p. 3). Because methods sections often drastically summarize approaches and downplay problems, future readers may not fully understand the methods enough to replicate them. Ideally, online researchers should reveal the potential flaws in their analysis while documenting their processes clearly so that readers feel that they would have reached similar conclusions if they underwent the same or similar procedures (Baym, N. K., 2012, p. 5; Giglietto, Rossi, & Rennato, 2012). They should also connect with the historical precedents of the phenomena they are studying (Baym, N.K., 2012, p. 181). I try to keep all these suggestions in mind while describing and justifying my multi-level approach.

³ In September of 2019, the Ninth Circuit Court of Appeal struck down LinkedIn's cease-and-desist letter to HiQ, a letter that asked HiQ to stop extracting profile information from LinkedIn's platform. Because the data was on a public platform available to anyone with a web browser, the court rules that collecting it with a scraper was not illegal (HiQ LABS, INC., v LINKEDIN CORPORATION).

⁴ On April 4, 2019, IRBNet ruled that my project (ID# 1357898-1, submission type "Other") qualified for an exemption, declaring it research, but that which involved no human subjects (Not HSR).

4.2 Multi-Level Approach

The next two chapters examine my case studies—each one consisting of two satirical videos uploaded to YouTube, from John Oliver and Jimmy Kimmel, respectively. The analysis of the cases is guided by these two main research questions:

- *RQ1: How does satirical climate change comedy attempt to intervene on and correct climate change misrepresentations?*
- *RQ2: What do the use of and reception of these videos reveal about popular culture's role in climate change communication?*

To answer these questions, I relied on three types of data: a contextual/textual analysis of the videos themselves; a summary of their online circulation and reception over a brief period; and, the core of this project, a deeper analysis of their reception on the YouTube comment board. First, I analyzed how the videos demonstrate the comedians' continued, and often risky, investment in the polarized topic of climate change. Next, I tracked how this satirical content (YouTube clips) circulated around the internet to become a discursive resource about climate change. Lastly, I investigated the YouTube comment board as a type of audience study to gauge the reception of these examples of satirical climate change comedy.

4.2.1 Step One: Examining the Contexts and the Texts

This step, which analyzed the contexts and content of Oliver's and Kimmel's examples of satirical climate change discourse, was guided by the related questions below:

- *RQ1A: How does the celebrity and history of Oliver and Kimmel impact their climate change messaging?*

- *RQ1B: To what climate change story and/or climate change misrepresentation (context) are their satirical texts responding?*
- *RQ1C: How do Oliver and Kimmel attempt to correct faulty climate change communication and to persuade their audiences?*

Investigating the context, satire's targets, is especially important to understanding how and if satire works, or whether it misses the mark. As previously mentioned, historicity, topicality, and referentiality (Feinberg, 1967, p. 3) are all essential conventions of satire (Bogel, 2001, p. 11). An important component of the "referentiality" of satire is the speaker's previous experience with discussing contentious current events and with using satire's approach: their credibility as satirists to target mistruths, fallacious people, and troubled institutions. Thus, I first examined both hosts' histories as commentators and satiric correctors as well as their videos' contexts, historical moments, and references. Each case study, then, includes detailed descriptions of the specific climate change misconception(s) or fabrication(s) that motivated these videos, whether they were news stories, events, policy changes, and so on.

A close reading of the content of the satirical texts of both Oliver and Kimmel was the next component of this step. To make the case that both hosts are combining comedy and climate change information to entertain and inform their audiences, I watched several of their videos to determine their methods. I then dissected all four texts into types of segments, which included comedy, satirical targets, climate change information, calls to action, and so on. I also examined how their videos responded to persistent climate change myths and frames as well as enforced scientific authority. The ambiguity and riskiness of both hosts' satirical targets and their potential for misinterpretation and/or resistance was

also scrutinized. In the analysis of their segments, I recognize that my readings are not necessarily those of the audience.

4.2.2 Step Two: Tracking the Videos' Online Circulation and Reception

The next step of my method addressed this question:

- *RQ2A: What does the online circulation of these videos reveal about how they are used and received by various audiences?*

This step involved investigating how individuals, organizations, and institutions appropriate this satirical content and “extract it from its original context, insert it into new discursive forms, and in so doing, reshape it into a resource in pursuit of a myriad of ends” (Baym, G., 2009, p. 119). In other words, I investigated how those in the online world responded to and used Oliver’s and Kimmel’s satirical comedy texts. My approach here was an adaptation of Geoffrey Baym’s method from Chapter 8 of *Cronkite to Colbert*. Here, Baym analyzes one controversial *Daily Show* segment (June 17, 2008) in which Lara Logan critiqued the coverage of the Iraq War by the commercial press. Baym investigates how this content “rippled around the Internet, recirculated and re-appropriated by a range of organizations and individuals” (Baym, G., 2009, p. 153). Using a Google search a few weeks after the program’s airing, he tracked this excerpt across “a vast range of websites that re-presented, recontextualized, and even reedited the Logan interview in pursuit of a variety of agendas” (p. 155). In assessing this clip’s virality and re-appropriation by active audiences, Baym focused on mainstream media, activist media, YouTube, small blogs, and collaborative media as well as the linkages between these online sources. The spreading of this segment beyond its original air date and the discussion it provoked represent the

contribution, Baym argues, that satire television is making to airing alternative voices and informing publics of the shortcomings of mainstream news (p. 163).

Similarly, by using Google's custom date range, I tracked Oliver's and Kimmel's segments across the internet during the first week of their release to examine their use as discursive resources. I focused on four main sites: news websites, entertainment websites, activist websites, and personal blogs. Of interest here was not only the reach of Oliver's and Kimmel's satirical climate change videos, but also their use: how disparate people and groups actively interpreted these segments to engage with the climate change discussion and express their own agendas about climate change. Because satire is so slippery—easily misunderstood and often abrasive—and because Kimmel and Oliver have different types of credibility and comedic approaches, I also examined the resistance to their satirical comedy. Lastly, I evaluated whether Oliver and Kimmel are perceived as delivering climate change information, journalism, or entertainment.

4.2.3 The YouTube Comment Board as an Audience Study

My third step assumes that YouTube is a powerful platform and resource that researchers should not ignore: it is the third most visited global access website after Google and Facebook. 1.9 billion people visit YouTube monthly and users watch over five billion videos per day. YouTube has also assumed several of the duties of traditional media, with 60% of people preferring video platforms to live television (Omnicores Agency, 2018); that is, it is a place where people may watch and re-watch popular culture when and how it suits them and share their experiences by directing others to videos (Burgess & Green, 2009).

And often accompanying these videos is significant discussion on the YouTube comment board, to which viewers may choose to read or contribute.

YouTube's comment boards also contain a plethora of information, such as providing a means to determine how people react to and discuss popular videos. According to Mike Thelwall (2012), the YouTube comment board is a "potentially valuable source of information about the act of watching videos, the issues depicted in them and their uses and gratifications" (p. 303). In a huge baseline study comparing 4000 videos with at least 999 comments each, Mike Thelwall (2012) discovered that entertainment videos (music, comedy, show clips) provoke shorter, more positive comments whereas videos about news and politics usually stir longer, more negative feedback along with more intense conversations. Videos about news, politics, and science also have higher reply densities: that is, a significant portion of their comments are involved in conversations. For instance, videos about religion have a reply density of 36%, which are followed by politics (34%) and science (14%) (p. 626). Thelwall also investigated those videos dedicated to hard science and polarized issues, which tend to have a reply density of around 25%. His baseline study allows researchers to grasp whether the audiences on YouTube comment boards are behaving in an expected manner. Given that climate change is a controversial topic, I was able to assess whether the comment boards behaved similarly to those in Thelwall's study.

Admittedly, YouTube comments are the product of a self-selected group who watches and then chooses to offer feedback, but that population still represents something. Lange (2008) argues that comment boards, composed of a mix of ages, social classes, gender, education, and nationalities, could represent a general internet audience's response.

In the least, the YouTube comment boards I examined might represent a general internet audience's response to satirical climate change messaging as well as the crisis of climate change.

The third lengthiest step of my method, then, involved analyzing the YouTube comment board as a way of studying how a specific audience interpreted the selected satirical climate change comedy videos as well as resisted, accepted, and expressed uncertainty about their corresponding climate change messages. I examined how users responded to the videos as well as recruited them as opportunities or entry points to discuss other related or even nonrelated matters. Underlying this step is the recognition that YouTube audiences are complicated. In some ways, YouTube and its viewers live up to early fears about mass culture and its corresponding audiences as well as recent social panics; in other ways, YouTube producers and viewers dispel these fears. That is, rather than passive consumers, many on YouTube are active users, creating, leaning in, and talking back to popular culture.

To flesh out these conceptions of YouTube users, I return briefly to some theories about audiences. Any treatment of popular culture must recognize that there have been several constructions of the audience: as the masses, the uncontrollable crowd; as objects of overwhelming media effects; as passive users and dissociated members of society who are susceptible to propaganda; as commodities to be exploited; as people immune or only partially affected by media messages; and as active users, interpreters, participators, and creators. What these theories debate, then, are mass media's influence on the audience and media's ability to manipulate public discourse.

Early models of media audiences were influenced by perceptions of audiences as crowds, as unruly masses preferring a diet of illusions over truths (LeBon, 1896). It was theorized that the crowd was especially susceptible to manipulative media messages, as was concluded in the thirteen-volume Payne Fund Studies (1929-1932). Researchers concerned about WWI propaganda and the threatening new media of film thought movies would implant inappropriate, if not dangerous, ideas into susceptible minds. The hypodermic needle model of media effects (Communication, 2016), which was influenced by behaviorism, saw media as injecting helpless audiences with messages; subjects were then conditioned to act in predictable manners. Unable to resist media messages, people would then lose their critical thinking faculties and make poor decisions that might threaten democracy.

The Frankfurt school critical theorists, who fled Germany during Hitler's reign and experienced the effects of propaganda, worried about the susceptibility of audiences to media messages. When they came to America, they saw frightening comparisons between Hollywood and fascist Germany (Bennett, 1982). They theorized that Hollywood, a powerful top-down institution, circulated products to a passive, approving audience in the same way that Hitler disseminated propaganda to his adoring crowds. They also worried that mass culture, the standardized shallow product of the culture industry (Adorno and Horkheimer, 1944; Adorno, 1941), would homogenize, vulgarize, and depoliticize audiences. For Marcuse (1964), the audience consisted of manipulated victims whose media consumption results in a loss of class solidarity, or a one-dimensional society in which class differences are concealed. The audience, termed "the mass" (Blumer, 1954), was clearly distinct from "the public" in that it was gathered not to discuss pressing issues

but to bond around lowly entertainment. Later political economic perspectives further qualified how audiences were manipulated and exploited by the culture industry. Some critics construed audiences as vast, unsuspecting labor forces whose viewing translates into ratings and whose work of watching (the commodity sold to advertisers) maintains the commercial structure of mass media (Smythe, 1977; Jhally, 1982; and Ang, 1991).

The audience was often envisioned as helpless against the spectacles of celebrity, advertising, and flashy pop culture (C. Wright Mills 1951, 1956). Some researchers concerned about media messaging focused on the influence/threat of television, such as Himmelweit et al's (1958) empirical study of the effects of television on 10 to 14-year-old children in Great Britain; and Gerbner et al's (1986) work on cultivation theory. Gerbner et al thought that television is different from (and more dangerous than) other forms of mass media in that it makes minimal cognitive demands on the audience: viewers need not be literate to watch broadcasts. Because television invites viewers to watch it for long periods of time, exposure to television gradually changes their perception of reality, such as in making them think the world is much more dangerous and violent than it actually is ("mean world syndrome").

Other theories questioned and qualified the effects of media on supposedly passive audiences, the most famous being the limited effects model of Paul Lazarsfeld, Bernard Berelson, and Hazel Gaudet. After conducting a survey on voters prior to the 1940 presidential election, Lazarsfeld et al found that media coverage affected only some people, having limited to no effects on many people's longstanding opinions; in fact, interpersonal communication had a more substantial influence. In the survey, the authors discovered that most people received their information about candidates from others who read about

campaign coverage in newspaper stories. Rather than encounter the media directly, an assumption critical to the hypodermic needle model, people have media filtered to them by others. Opinion leaders, active users who interpret and engage with the media, pass information to the less-active members of the public, the opinion followers (Lazerfeld, Berelson, & Gaudet, 1948). Their “limited effects paradigm” was further explicated by Joseph Klapper in 1960, who demonstrated that in comparison with group membership, social status, values, and so on, media are relatively powerless to change audience’s minds. The media’s primary influence, he stated, is mainly in reinforcing preexisting attitudes and beliefs.

Other theories supporting the value of popular culture continued to question the aforementioned passivity and suggestibility of audiences. The cultural critics, although still worried about the exploitation of audiences, rejected the concept of the audience as “mass” and popular culture as low culture (Hoggart, 1957; Williams, 1961). Instead, the value of popular culture was grounded not in what it was but in its local and particular uses by audiences. Active audience researchers mistrusted the conception of users as empty slates and gullible receivers who react predictably to injected media messages; they argued that rather than serve media, users may make media serve them. These theories included research into how people integrated media into the fabric, rituals, and routines of their lives (Bausinger, 1984; Hobson, 1982; Lembo, 2000)—that is, how people “used” it to gratify their own needs and create their own meanings. Crucial to the active audience concept was Stuart Hall’s Encoding/Decoding model (1980) that recognizes that media messages are rarely taken straight; they are usually negotiated by readers/viewers who interpret the denotative and/or connotative meanings of signs and are actively involved in meaning-

making. That is, the message that textual producers impart may have “no necessary correspondence” (p. 129) to what audiences eventually interpret. Hall’s work inspired other analyses of how audiences dynamically and often contrarily interpret/decode texts according to their own perspectives and experiences, such as Fiske’s (1987) investigation of how representations on television dramas invite audiences to identify with and develop relationships with characters and their stories. There were also Radway’s study (1984) of how female readers ignore and/or appropriate patriarchal messages in romance novels, Ang’s work (1985) on how Dutch viewers emotionally connect to/rewrite *Dallas* so that it is meaningful to them, and Morley and Brunsdon’s analysis of resistant readings of *Nationwide* (1999). In all this research, the authors contended that popular culture enables audiences to often ignore or resist dominant ideologies, creating their own meanings from what they are given, for better or for worse.

I have mentioned these competing interpretations of the audience because they inform various perceptions of how people use online popular culture as well as how they behave in large online environments. Similar to debates about popular culture, online activities have often inspired praise, suspicion, and outright moral panic. On the one hand, the internet’s earliest enthusiastic promoters saw online forums, such as UseNet groups, as consisting of active audiences who would positively transform the public sphere; these forums combined “the ideal of participatory democracy of the Greek agora and the Colonial New England town meeting” (Poster, 1990, p. 123) and McLuhan’s ideal (1964/1994) of a global village connected by advanced media technologies. In other words, instead of simply broadcasting information, the internet offered virtual spaces for people to gather—to lean in and talk back to media as well as each other. In the most optimistic

interpretations, these virtual discussion spaces have the potential to create informed citizens, enhance democracy, promote egalitarianism, and even fashion influential nonstate actors who use the internet, the twenty-first century's town hall, to critique and challenge power (Castells, 2008, p. 90). It is argued that the internet, such as YouTube, encourages these behaviors by breaking down boundaries and supporting activities not found in traditional media watching (Burgess & Green, 2009). With new media, users may choose to "publish, maintain, upload, comment, rate, save, share, connect, unite, and read content" (Li and Bernoff ctd. in Crittenden, Hopkins, and Simmons, 2011, p. 176). On the same note, Jenkins (2006) also enthusiastically claimed that the digital revolution—the move from Web. 1.0 to 2.0—and the convergences of media platforms enabled people to express themselves by engaging with popular culture, taking on the roles of producers. In this participatory culture, people may express their freedom and create their identities around their enjoyment of and, perhaps, appropriation of media. In Jenkins' view, linking to and praising John Oliver's *CC Debate* on your Facebook page, for instance, or turning a screen shot of that debate into a meme, are not passive responses. These actions communicate one's appreciation of satire and concern about climate change. They also increase the reach of John Oliver's satirical climate change comedy and invite others to discuss it.

At their worst, though, YouTube and its comments appear to live up to certain age-old anxieties about mass culture. YouTube started out as a platform in which users could produce amateur videos and broadcast themselves, but seemed to quickly transform into a website dominated by commercialized, monetized content that Adorno & Horkheimer might have accused of representing the worst of mass culture. Right now, the top 26 YouTube personalities (based on the number of their channel subscribers) consist of beauty

vloggers, travel vloggers, children (whose everyday play and antics construct the content), sketch comedy shows (many remarkably lowbrow), and gaming commentators (Leskin, 2019). In fact, almost half of the top YouTube personalities consists of males who make commentary, often quite offensive, sexist, and racist, while playing video games. The number one spot is taken by PewDiePie (Felix Kjellberg) who has 102 million subscribers.⁵ In contrast, others might say that rather than exemplify fears about popular culture, these YouTube personalities are simply making money doing what they love: deriving pleasure from their engagement with video games and sharing it (and their skills) with their fans.

The YouTube comment board as well as other online message boards have also been perceived as virtual spaces populated by LeBon's unruly masses (1896); people often seem to go online not to discuss rationally, but to fight, and to rouse angry virtual crowds. The worst of human nature often erupts on online message boards, which promote flaming, narcissism, procrastination, slacktivism, and trolling (Burgess & Green, 2009; Williams, 2015). Recent books have further discussed the antisocial nature of online communities, such as Facebook, along with the propensity of online comments to promote extremism, hijack rational thinking, and threaten democracy (Vaidyanathan, 2019; Marantz, 2019). These effects are magnified in large, unpatrolled online communities, which invite and proliferate negative responses, which alter the discussion's tone and spread adverse effects throughout the community (Reagle, 2015, p. 72; Chmiel et al, 2011). In larger online communities that are difficult to police, commentary may degenerate through topic decay,

⁵ It should be noted that the top of YouTube culture seems fairly homogenized: the majority of the highest grossing YouTube stars are young, white males

poor comment quality, bots, exaggerated comparisons, and references to Hitler (Shirky, 2013; “Godwin’s Law”). Rather than egalitarian, online forums may also perpetuate the offline world’s power structures, such as gendered patterns of interaction (Lambiase, 2010; Herring, 2010),⁶ which are often seen on the message boards of the aforementioned top YouTube gamers. YouTube, then, in its worst light, lives up to the most pessimistic theories of the effects of mass culture on critical thinking and on public discourse.

YouTube comments, therefore, are often difficult to read not only because of their content but also because of their nature; in the least, they challenge conceptions of communication. That is, online communication may be “anonymous, atextual, asynchronous, remote, permanent, and/or very public, although some online forms may be none of these” (Thelwall, 2012, p. 617). In my experience, all of these features describe the interactions on the YouTube comment board. Comments are both contextual and atextual: people might acknowledge a video or disregard it entirely, reply to others’ comments, ignore feedback, start a new or tangentially related topic. Because online comments are brief, reactive, and asynchronous, they are often hypotextual (Reagle, 2015): contexts are lost when comments are forwarded or used for other purposes (p. 79). On the YouTube comment board, for instance, people often back-up, apologize, and re-post when their remarks are removed, when they confusedly direct their remarks to the wrong addressee, or when they mistake the context.

⁶ Reagle (2015) attributes negative online behaviors to two main phenomena: de-individuation and de-personalization. In de-individuation, online anonymity and virtual communication cause a loss of identity or sense of self and the corresponding norms and social rules followed in the face-to-face world. As a result, people “exhibit greater status equalization ... and disinhibition” when they are online (Reagle, 2015, p. 95). In depersonalization, individuals relinquish their personal identities to take on/conform to the aspects of a group, such as ganging up on a climate change affirmer or denier (Reagle, 2015).

When posting, people also exhibit different levels of intellectual and emotional engagement; they might contribute a thoughtful remark, an unrelated reply, a visceral response. Those on the board guide conversations, start arguments, or offer their opinions before cursorily leaving. Others jump on the board to reply to feedback whereas others merely interrupt and grandstand. Commenters are also erratic. After posting, people may leave abruptly, remain to start a conversation, or respond to a comment a week, a month, or even a year later; they may repeat their previous remarks or delete them. Computer mediated interaction also naturally allows purely passive participants, known as ‘lurkers,’ who do not engage in any obvious way, although their contributions may be important (Dynel, 2014, p. 39; Orgad, 2015, p. 43).

Perhaps because its genre of communication is so problematic, YouTube comments have tended to attract “little social science research” compared with those from other social network sites (Thelwall, 2012, p. 616). For instance, in three books on digital research—*Digital Research Confidential* (2015), *Internet Inquiry* (2009), and *The Ethics of Internet Research* (2009)—there are case studies on the methods and the ethics of analyzing the texts of blogs, Facebook posts, Flickr tags, online reviews, text messages, and Tweets, and so on, but no chapter specifically mentioning the methods of nor reasons for analyzing or not analyzing YouTube comments; it is as if this communication has been ignored entirely. Nonetheless, some recent work on analyzing YouTube comments has adopted a mixed-methods approach to explore how interaction is hindered by the design of YouTube’s platform: the options of liking and disliking do not necessarily promote deep conversation or connections between interactants (Benson, 2015). Chung (2015) also incorporated three metrics (exposure, engagement, and insight) to investigate six anti-smoking campaign

videos on YouTube (1278 comments over a 7-month period) to determine which messages were the most effective (p. 115-116). Her measure of effectiveness was a combination of the videos' views as well engagement (the number of and the length of comments) with the videos' messages.

In this project, I recognize that YouTube is a complicated platform and space. It is a website that is commercialized and monetized, but also a place where audiences may engage with popular culture on their own terms as well as share and critique it. It is place that both lives up to and challenges the worst fears about popular culture, media, and their effects: users vent, troll, and bully but also engage, share, and sympathize. I also follow up on Joseph Reagle (2015), who took up comments in his research. After classifying the types and functions of online "comment" (the author uses the singular term), Reagle (2015) contends that although he does not recommend that researchers read all of the comments all of the time, they should definitely not forsake them entirely. He contends that by taking a dive to the bottom of the web and wading through its informative, manipulative, and bewildering messages, researchers may investigate human nature, perhaps mining a certain wisdom from the crowd. Even when difficult to read because it is offensive, ill-informed, or just plain nonsensical, I contend, as Reagle likewise does, that comment is nonetheless "communication, it is social, it is meant to be seen by others, and it is reactive" (p. 2). In the least, YouTube comments can tell us something about the reception of satirical climate change comedy and the understanding of the climate crisis. It is for all these complex reasons that the YouTube comment board is an audience worth studying.

4.2.4 Step Three: Analyzing YouTube Comment

Ignatow and Mihalcea (2018) recommend that because there is not one recognized method for analyzing online data, researchers should use inductive, reflexive methods to determine “which features emerge as prominent from the collected material (for example, in the form of repeated themes and patterns, or conversely in phenomena that seem unusual because they are at odds with patterns found in the material)” (p. 53). To get a more complete picture of the YouTube comment board, then, I took their advice and used a reflexive mixed-methods approach that combined limited quantitative analysis with qualitative approaches. Whereas a quantitative approach allowed an investigation into the broader trends and key differences between YouTube comment boards, qualitative analysis permitted me to study key anomalies, conversations, influencers, and so on. Each step, or module of my research process was guided by a discovery-oriented sub-question (Agee, 2008, p. 434) that generated data. The end goal, when analyzing and then comparing these case studies, was understanding the reception of satirical climate change comedy.

Online data are always streaming, so researchers must be wary of excluding data or biasing the sample (Page et al, 2014, p. 160). Therefore, the latest possible endpoint for collecting the comments for all the videos was chosen. On Dec. 18, 2018, I downloaded the full sets of comments for each of the four videos. To scrape the data, I used an open-source web client developed by Philip Klosterman. This scraper, which is not affiliated with YouTube, “uses the you-tube-comment-api module to gain access to the comments. Given a YouTube video URL the client will request all comments for that video from the API” (YouTube Comment Scraper). This scraper does not function on comment boards that have been disabled. Although the scraper enabled me to download comments as either

open-standard file format JavaScript Object Notation (JSON) or Comma Separated Value (CSV) files, I primarily relied on the second file format. The CSV files yielded the following information, all relevant for my data analysis: Comment ID, Username, Date, Timestamp, Number of Likes, Comment Text, and Replies. The scraper automatically generated the comments from the most recent (top) to the earliest (bottom) for both file formats, so it was easy to gauge the order of responses and locate the earliest feedback to the videos. The most upvoted comments, longest conversations, frequent commenters, and patterns of word use, were located by using the “Sort and Filter” function from the top drop down “Editing Menu” for the CSV files. Thus, my analysis of the YouTube comment board involved a constant going back and forth between sort and filter searches and resetting the comment board to its original state. (Additional information on the interface may be found in Figures 1-2 in Appendix A.)

Thus mixed-methods sampling, which involves the selection of units or cases for a research study using both probability sampling (to increase external validity) and purposive sampling strategies (to increase transferability)” (Teddlie & Yu, 2009, p. 78), drove my data collection. Probability sampling creates cases that represent a general population while making larger data sets more manageable, which is necessary when YouTube comment sets total over 1,000; the largest comment sets in this project were over 8,000 and 14,000 comments. Purposive sampling, alternatively, allows the researcher to move beyond quantification to use her judgment and choose cases providing the richest information, such as selecting from the longest conversations. For the purposive sampling, my unit of analysis was the entire comment board.

Probability sampling provided a sense of the general commenting trends for each video, particularly the positive, negative, and mixed reactions to the segments of satirical comedy and the reasons for these stances. It is impossible to generalize from the attitudes in a set of YouTube comments to those of the American (or even global) population, but it is possible to gauge the general attitudes towards a certain video. Table 2 indicates the sample sizes, which were based on a 95% confidence level.⁷ The corresponding next step involved creating the sample by randomly selecting the comments,⁸ copying them from the CSV files, and pasting them into N-VIVO, creating electronic text libraries.

Table 2. *Random Sample Sizes for the Four Comment Boards*

VIDEO	TOTAL# OF COMMENTS	SAMPLE SIZE
John Oliver's <i>Statistically Representative Climate Change Debate</i>	8,678	(368)
John Oliver's <i>Paris Agreement</i>	14,288	(375)
Jimmy Kimmel's <i>Scientists on Climate Change</i>	5,082	(358)
Jimmy Kimmel's <i>Hey, Trump, Climate Change Affects You Too.</i>	815	(262)

Source: Survey Monkey

⁷ There was a 95% probability that that selection reflected the entire population of comments for that video (not the general population).

⁸ Selecting comments for each video involved using the random integer generator from www.random.org, which chooses numbers individually, so that the selection of one number does not affect the selection of another. The sampling was managed so that the generator pulls numbers from the comment board in three places: the most recent, the middle, and the earliest. For instance, for John Oliver's "Statistically Representative Climate Change Debate," I asked the program to generate 123 integers between the values of 2 and 2893, 123 integers between 2894 and 5786, and 123 between 5787 and 8678. I then returned to the CSV file format and cut and pasted the designated comments into N-Vivo. When comments were missing, I returned to the random number generator and selected more data until the designated sample sizes were achieved. For Jimmy Kimmel's "Scientists and Climate Change" PSA, which had several missing comments, this second random sampling process was repeated four times.

All the comments from each sample were put through first and second cycle coding. The first cycle involved structural coding, a form of data lumping, which “applies a content based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question” (Saldana, 2013, p. 98). The structural coding in this project involved first grouping the data according to the tone of the comments: whether users reacted positively, negatively, or expressed a mixed or no opinion of the hosts’ climate change messaging. After the comments were lumped for the aforementioned general stances, they were dissected into smaller themes. These themes, which indicated the reasons for accepting or rejecting the videos’ messages, were expressed as gerunds. (They are reacting to Donald Trump as president, disapproving of Oliver’s methods, asserting the benefits of CO₂, and so on). The coding processes were both inductive and deductive: the themes that emerged from the data on Oliver’s YouTube boards were then used to file similar comments on Kimmel’s boards to detect important similarities and differences in the reception of the videos. Because of the frankness and unfiltered nature of YouTube comments, people were usually transparent about the values and beliefs underlying their opinions of Oliver and Kimmel’s climate change messaging. When there were difficulties with determining meaning because a comment was vague, incomplete, or otherwise confusing, I returned to the full set of comments to examine the context further or examine that person’s history on the board.

Focusing on the most prevalent themes provided insight into the general conflicts on the board, the framing of climate change, the repetition of trenchant climate change myths, and the overall positive, negative, or mixed sentiment. An overview of themes also allowed a comparison of the comment boards. However, I recognized that probability

sampling revealed only one perspective of the YouTube comment board. For any one comment, that is, sampling may not tell the story of its popularity (likes), the conversations and/or arguments it provokes, as well as the depth of responses it instigates.

Consider this remark, for instance, in which the speaker reveals his disbelief about American climate change denial: “I don’t live in the US so I must ask: Are there really that many people who denies [sic] global warming?” (Fernando Dobbin). This question registered as just one item from the random sample, but when I went to the full set of comments to locate it, I realized its greater significance. In the humble way the speaker drew attention to American climate change skepticism as an aberration and to the contrast between global and American perspectives, he drew 229 likes. He also sparked a 141-comment conversation, in which several global citizens admitted their own experiences with climate change. The random sample also does not distinguish between the proportion of comments that are original responses inspiring conversations (parent-level comments), those that are replies, or the overall reply density (ratio of replies to others per overall comments) which reveals the intensity of discussion about certain topics. Thus, the random sampling procedure was followed by a purposive sampling procedure that mined the entire sets of comments. Purposive sampling involves selecting units or cases “based on a specific purpose rather than randomly” (Tashakkori & Teddlie, 2003, p. 713), such as looking at key comments from common themes. My project adapted and extended the non-probability/purposive sampling techniques from Joseph Reagle’s *Reading the Comments* (2015). I analyzed the most upvoted comments, the longest conversations, surges in feedback, and board influencers, which all provided different perspectives on the YouTube comment board, which are explained below:

- *Analyzing the most upvoted comments provided insight into what was popular, or what became further popularized by YouTube's interface. These comments also revealed the propensity for snark, bad jokes, and inflammatory remarks that were often made in response to satire. The most upvoted comments also revealed the general tenor of the board.*
- *Investigating the longest conversations unveiled how and why people engaged with the videos and other users on the comment board—how they interacted with the climate change texts, using them as entry points to discuss related or unrelated matters.*
- *Examining recent surges in commenting allowed me to investigate the continuing relevance of satirical climate change comedy, particularly how users returned to the board to respond to changes in the climate change narrative.*
- *Studying the most frequent commenters, such as those who bully, troll, and teach, revealed how people used the videos to promote agendas, confirm climate change myths, convey accurate climate change information, and so on.*

Rather than discuss each video individually, which would make for a very repetitive and lengthy analysis, I draw from all four examples of satirical comedy when analyzing the criteria above.⁹ Before presenting this data, however, I must first analyze the contexts and texts of Oliver's and Kimmel's satire as well as present the reception of and resistance to their videos upon the first week of their release. These are the subjects of Chapter 5.

⁹ Comments are cited verbatim to preserve users' original voices. Because people on the YouTube comment board are responding very quickly, with little attention to grammar, punctuation, spelling, and mechanics, and even lesser thought to proofreading, many statements contain significant errors. I have opted to not write sic after every error, which would significantly increase the word count of the document, make some remarks unreadable, and probably annoy readers. I respectfully request that readers trust that the errors in the comments belong to the users and not this writer.

5 Oliver and Kimmel Correct Climate Change Misrepresentations

This chapter contends with the first part of the method: analyzing the contexts and texts of the four samples of satirical climate change discourse along with their initial reception as they circulated online. Section 5.1, which presents an overview of the case study texts, analyzes Oliver's and Kimmel's credibility as celebrity activists as well as their relationship to journalism. 5.2 and 5.3, respectively, present the contexts and methods of Oliver's and Kimmel's videos. A brief analysis of their online circulation is the subject of 5.4.

5.1 Case Study Texts

Two of the case study texts are from John Oliver's program *Last Week Tonight*: his *Statistically Representative Climate Change Debate* (May 11, 2014); and his *Paris Agreement* (June 4, 2017). The others are from the late night program *Jimmy Kimmel Live!*: *Scientists on Climate Change* (May 2, 2016); and his parody PSA (October 2018), which is entitled *Hey Donald Trump -- Climate Change Affects You Too Affects You Too*. These segments demonstrate both hosts' investment in debunking climate change myths and providing accurate climate change communication.

This chapter addresses these three related research sub-questions:

- *RQ1A: How do the celebrity and histories of Oliver and Kimmel impact their climate change messaging?*
- *RQ1B: To what climate change narrative and/or climate change misrepresentation (context) are these satirical texts responding?*

- *RQ1C: What methods do Oliver and Kimmel use to correct faulty climate change communication and to persuade their audiences?*

5.2 Oliver and Kimmel as Celebrity Climate Change Communicators

Celebrity has been theorized in terms of a commodity, representation, and effect (Turner, 2004, p. 9); as a “cultural text” overdetermined by its particular historical conditions (Dyer, 1979); and as an inherently contradictory phenomenon produced by a “commercial industry” and its associated sub-industries (Gamson, 1994, p. 58). Whereas I do not discount these interpretations, in this dissertation, I am more concerned with celebrities, rather than celebrity, particularly how their performance of authenticity and their relationship with fans impact their influence, credibility, and climate change messaging. The special connection between fan and celebrity is what Rojek (2001) qualifies as a “para-social interaction,” which is based on “relations of intimacy constructed through the mass-media rather than direct experience and face-to-face meetings” (p. 52). This relationship, separated yet enabled by media, is dependent on the perceived authenticity and closeness of the celebrity to the fan. In his taxonomy of the three types of celebrity systems, which are constructed by media industries, audiences, and celebrities themselves, P. David Marshall (2014) assigns a special place to the television star’s affective power in relation to those of film and popular music stars. The film celebrity, once at the center of the entertainment industry, has an influence constructed by his distance from fans and his aura of mystery; despite the industrial construction of the music star, her effect is derived from her authenticity, emotionality, and personalized performances. The impact of the television celebrity, however, derives from how he breaks

down the distance between himself and his fans and establishes relationships of familiarity (p. 119). Much of this familiarity owes to how the television star, on the small screen, is invited into the domestic realm. News presenters and television hosts, in particular, derive their affective power from their timely commentary on current events, their direct addresses to their audiences, and “their dependence on the system of celebrity that exists in other political or cultural domains” (p. 126). The television star’s affective power, in my opinion, is amplified for talk-show hosts like Oliver and Kimmel who blend comedy and politics, familiarizing complex issues, and encouraging their audiences to have conversations about public affairs. This impact may be further amplified when the small screen of television becomes the even smaller screen of YouTube, making celebrities accessible at any time and at any place.

It has also been theorized that celebrities become more real, more believable, when they seem to be revealing their genuine selves, to be taking actual risks. Collins (2007) analyzed the blurred boundaries between the activism of Martin Sheen’s offscreen self and the demeanor and policies of his onscreen character: President Bartlett in *The West Wing* (1999-2006). According to Collins (2007), when there is a momentary consonance or confluence between stars’ onscreen and offscreen selves, such as when celebrities threaten their significant capital and their lives by engaging in activism or other risky pursuits, they seem more authentic, breaking down that distance between themselves and their fans. Others have theorized the effects when celebrities appear to drop their facades, baring their emotions and their true selves. According to Chouliaraki (2013, p. 86), when celebrities perform authenticity, and capitalize on their emotional connection to their fans, they may amplify the voices of distant sufferers.

It is my contention that Oliver's and Kimmel's particular forms of celebrity authority and authenticity, as are investigated in the next sub-sections, derive from their investment in risky topics, their television pasts, their loyal fan bases, and their seeming closeness to their audiences. As celebrities, Kimmel and Oliver have the potential to invigorate the subject of climate change, make their videos go viral, and create significant discussion in the internet's public spheres. Or as Boykoff & Goodman (2009) put it, celebrities may be "important non-nation-state figures in the discursive, material and media politics surrounding climate change" (p. 396). They might open up space in the public sphere and the science/policy nexus through the creation of a novel form of 'expertise' or 'authorized speakers' (p. 396). In short, Oliver and Kimmel draw attention, new audiences, and new discussions to climate change. They join the list of other celebrities who have taken up climate activism, such as Leonardo di Caprio, Robert Redford, Julia Louis-Dreyfuss, and Mark Ruffalo.

I recognize, however, that celebrity activism is not without its criticisms and potential drawbacks. When celebrities get involved with projects, they may shift the focus from causes to themselves, motivating significant issue drift (Meyer & Gamson, 1995) or, at worst, they may be guilty offering "hyper-individualized solutions to broader social and cultural problems" (Littler, 2008, p. 246). The most cynical readings of celebrity activism regard it as inauthentic. Taking on causes and participating in global charities are merely spectacles, clever tactics for stars to participate in safe, mediagenic, stage-managed causes so that they may increase their publicity and raise their profiles (Pringle, 1993; Brockington, 2008, 2009; Little, 2008). When Gisele Bundchen, for instance, joins a climate change march, she adds to her star value by suggesting her concern about the

current environmental crisis. In doing so, she may make fans respect her and temporarily forget about her unsustainable celebrity lifestyle. Unlike a photo-op that appears once in *US* magazine, however, Oliver's and Kimmel's climate change messages have left a more lasting impact. Even a few years after their release, their videos continue to reach new audiences, keeping the climate change crisis in the public eye.

5.2.1 Oliver's Authority and Authenticity

Oliver's celebrity authority to speak for climate change derives from his previous television experience and coverage of important and controversial public affairs issues. Oliver honed his comedic commentary on the British satirical news program *Mock the Week* (2005-2019) and *The Daily Show with Jon Stewart* (1999-2015). He began working on *The Daily Show* as Jon Stewart's senior British correspondent in 2006, eventually guest-hosting this program for three months from June to August 2013. His popularity and skill eventually led to acquiring his own show, *Last Week Tonight* with John Oliver, for which HBO gave him full "creative freedom (no obligatory interviews with celebrities promoting their latest film or TV project) and none of the ratings pressure (or potential for disgruntlement on the part of sponsors) inherent to commercial television" (Guthrie, 2014). On his program, Oliver aimed to cover topics neglected by journalism, such as the General Motors' recall, for which there has been "a slightly peculiar lack of outrage." Accordingly, in his first test program on March 30, 2014, he addressed GM's less than timely response to ignition problems. HBO programming president Michael Lombardo, asserted that *Last Week Tonight* would operate by a different set of rules: the program's success is "not going

to be about the numbers; it's going to be about doing the best show he can do" (Guthrie, 2014).

Oliver seems to have used his freedom at HBO, his ample writing and stand-up experience, his comedic political commentating skills, and his team of writers to explore topics that seem too minor, too risky, or too inexplicable for commercial news programs. He has addressed the tax-free status of churches, food waste, unethical election policies, and the lack of sexual education in American schools. (In Episode 8 of Season Two, he even interviewed Edward Snowden). He has also meticulously explained phenomena that the average American, if not his own viewers, may find confusing, such as debt-buying, Bitcoin, and net neutrality. The misrepresentation of climate change, an appropriate topic for Oliver's arsenal, is a topic to which he has repeatedly returned. Beyond the videos in my case study, Oliver covered the subject more humorously in his *Doomsday Video* (April 19, 2015) and, more recently, in his defense of the Green New Deal (May 13, 2019).

For his work in climate change and other topics, Oliver is an important media figure who migrates between investigative journalism (exposing the exaggerations of the Miss America organization, for instance) and the resurging sub-field of explainer journalism (describing the dull but important issue of net neutrality). Instead of focusing on delivering the breaks in the latest stories, explainer journalists emphasize the "how and the why" of stories already out there. They take coverage of a saturated story on a complex issue, summarizing it and deconstructing any spin, so that readers/viewers may best understand an issue to interpret future developments (Zhang, 2016). Explainer journalism sites such as Vox.com are especially adept at breaking down dry, technical topics and public affairs issues for general audiences, who may then further research subjects on their own. Similar

to an explainer journalist, Oliver often dissects multilayered, ignored issues, fleshing out their contexts by thoroughly identifying key terms, players, perspectives, and problems, but with a distinctly comic viewpoint. For instance, in his April 22, 2019 episode, he translated the confusing details of the Mueller report—why it was both simultaneously damning and inconclusive. As humorous as his fifteen-minute monologue was, it still summarized the report’s baffling conclusions so that audiences could follow future developments. Despite this work, Oliver refrains from accepting the label of journalist, admitting that he is merely a comedian who employs a team of “aggressive fact checkers” to keep the jokes from collapsing (Robinson, 2015).

Several people and organizations have rejected Oliver’s humble disclaimers. Suebsaeng (2014) and Poniewozik (2014) consider him an investigative or explainer journalist, with the latter noting that a magazine writer produces *Last Week Tonight*. Poniewozik also contends that both news analysis and editorials count as journalism. He explains that when Oliver “spends fifteen minutes arguing the stakes of net neutrality, people actually pay attention and even act on it. If that makes it ‘not journalism,’ then it’s journalism that has the problem.” In other words, Oliver is doing what the best journalism should do: bringing necessary attention to issues affecting America and the world, even if he is doing so with laughter. Various award-granting agencies have also considered him far more than a comedian. According to his wiki, his *Last Week Tonight* program has a plethora of awards and nominations, whether they are for excellence on the internet (Webby), superb journalism (Peabody), “Outstanding Achievement in News and Information” (Critics Choice), or accurate and fair representation of LGBT issues (GLAAD). In his first Peabody Award (for his first net neutrality segment), Oliver was

commended for his “resolve not simply to explore headline news, but to pull back the proverbial curtain and show us the subtle mechanics at work in our nation’s democracy and culture. . . . For bringing satire and journalism even closer together.”

Oliver is clearly not only a popular comedian, political commentator, and talk-show host, but also a significant celebrity. Whereas his HBO audience averages about 1.0 million views in real time, subscribers to his *Last Week Tonight* YouTube total over 6.6 million. On YouTube, then, there is a substantially larger audience watching Oliver’s program when it suits them and then actively sharing its content, extending its reach. The formal definition of reach “is the total number of households or persons that are supposedly exposed to a message in a particular medium at least once over a certain period Reach can be thought of as the cumulative audience” (Wimmer & Dominick, 2006, p. 378). Based on Oliver’s YouTube views, his reach is indeed impressive: he has several videos with over 20 million views whereas his most watched video, at close to 36 million views, is “Donald Trump” (Feb. 28, 2016). In contrast, Jon Stewart’s most watched YouTube video—his extended interview with Malala Yousafzai from October 10, 2013—has only 3.9 million views. Whereas many of Jon Stewart’s videos have one million views, Oliver regularly attracts much larger audiences.

5.2.2 Everyman Comedian and Reluctant Activist Kimmel

Whereas Oliver’s credibility to speak about serious subjects such as climate change partially depends on his previous involvement with satirical political comedy and journalism, Kimmel’s integrity owes much to his evolution from humble comic to unexceptionable late-night host to (occasionally awkward) social commentator.

Previously, Kimmel hosted *The Man Show* (1999-2004), which consisted of childish pranks and skits that both celebrated and mocked sexist, coarse behavior. He also regularly avoided strong political statements in his early days of hosting *Jimmy Kimmel Live!*, which began, in 2003, with a standard(ized) late-night format—monologue, stand-up comedy segments, mean tweets, coarse humor, gags with bystanders on the street, desk interviews, and musical performances. Of all the late-night hosts, he was once known for having the most conservative fanbase (Hiebert, 2016).

Kimmel took a semi-serious turn in his 2015 *Message for the Anti-Vaccine Movement* segment, but it was two years later that his social commentary and his politics were noticed. In a tearful opening monologue on May 1, 2017, Kimmel confessed that he had almost lost his son to a congenital heart defect, but because of his health insurance, he could send his child to the Children’s Hospital in Los Angeles. He segued from this near-tragedy to President Trump’s proposed cut of six billion dollars from the National Institute of Health, which would detrimentally affect health insurance for Americans. But it was this next statement that nailed his audience’s and the media’s attention: “If your baby is going to die and it doesn’t have to, it shouldn’t matter how much money you make . . . I think that’s something that whether you’re a Republican or a Democrat or something else, we all agree on that, right. We do?” Kimmel repeatedly stressed that because affordable health care is a non-partisan issue, every decent American should be fighting for it. “No parent should ever have to decide if they can save their child’s life. It just shouldn’t happen.” This emotional confession further familiarized the already approachable Kimmel. That is, he seemed to take a risk here, creating a consonance between his offscreen and onscreen selves, enhancing his authenticity and affective power (Collins, 2007).

And his monologue, at least from my cursory analysis of the YouTube comments for this video, also seemed to win him new fans: here was a talk-show host worried about the unfortunate decisions that uninsured Americans might have to make about their children. Similarly, on October 1, 2017, Kimmel condemned the Mandalay Bay mass shooting, which happened in his hometown of Las Vegas, Nevada. Since these speeches, the comedian has grown increasingly more irate about what he sees as questionable government policies. He regularly focuses his opening monologue on a touchy subject, incorporates satire, and targets President Trump. Less than a few weeks before his second climate change segment, in fact, Kimmel referred to President Trump as “a liar and not even a good one” for denying that Russian intelligence agencies meddled with the 2016 elections (Nevins, 2018).

Kimmel, however, has denied his dramatic metamorphosis. He acknowledges that his stands on affordable health care and the Las Vegas shootings won him both notice from fans and acclaim from the media, but he contends that before these comments, he had been discussing politics for a very long time. In an interview, he asserts that “there wasn’t one night of the year leading up to the election where we didn’t talk about politics. So, for me, it’s always just a matter of what people are talking about and commenting on and what’s going on in the news” (Marchese, 2017). He nonetheless admits that the current administration has caused a dramatic shift in both his attitude and intensity of concern: “I feel frustrated. . . . I go to bed worried and I wake up worried, and I honestly don’t know if things are going to be okay. I worry that we’re going to look back at Donald Trump almost fondly because someone worse will come after him” (Marchese, 2017). Despite his political statements, Kimmel remains ambivalent about his show being deconstructed into

segments that then circulate and come to represent the program; he prefers that viewers watch the entire show, for which the network pays him. When asked if he would ever switch to hosting a satirical news program, such as John Oliver's *Last Week Tonight*, Kimmel says he will preserve the conventions of the late-night talk show to appease the audience, the producers, and the program's publicists. In other words, there is little chance that he will stop interviewing celebrities and hosting popular musical acts any time soon.

Kimmel's satirical comedy, though much tamer and less complicated than Oliver's, is somewhat riskier. That is, when he addresses such topics as affordable health care, gun violence, climate change, and President Trump, he may alienate those conservative fans who appreciated his goofy political incorrectness on *The Man Show*. His stances are also precarious, given that his immensely popular program (usually second or third in the late-night ratings) is on ABC, a major network previously known for resenting their employees, such as Bill Maher and Roseanne Barr, making political comments that may potentially anger advertisers. When everyman comic Kimmel becomes political, he also risks his online popularity (13 million *Jimmy Kimmel Live!* YouTube channel subscribers). It is perhaps because of his seemingly unstable position that negative feedback on Kimmel's statements causes his videos to be periodically removed from YouTube or have their comment boards disabled. Kimmel's *Scientists on Climate Change* disappeared from the internet for most of the summer of 2018.¹⁰ Likewise, his *Kids Explain Climate Change to Donald Trump* had its comment board shut down just a few weeks after the video was

¹⁰ Despite my investigations, I have not yet been able to determine why and how Kimmel's video disappeared, but I am guessing that ABC may periodically intervene in some way. Figuring out this back story is definitely a project for future research.

posted, probably because the feedback was so vitriolic. With Kimmel's gambles, however, come the reward of reaching those viewers who appreciate the seeming consonance between his on-screen and off-screen selves. Also, unlike other more intellectual, outsider satirists, such as Oliver, Kimmel has a self-deprecating demeanor while delivering his accessible explanations of public affairs. That is, he may attract a different audience to the problem of climate change and its impacts.

Kimmel, similar to Oliver, has shown a deep commitment to debunking climate change mistruths and spreading accurate climate change information. Up until recently, Kimmel's *Scientists on Climate Change* was his most watched climate change segment, at over 943,000 views. However, Clooney's May 19, 2019 parody PSA on *Jimmy Kimmel Live!* has since accrued over 1.1 million views. Kimmel also seems intent on reminding his viewers of the climate change crisis, not only through longer segments but also through shorter, less serious messages, such as a skit on May 29, 2019: *Global Warming Could Prevent Jimmy Kimmel from Realizing His Dream*.

5.3 Oliver's Satirical Comedy: Contexts and Texts

Oliver addresses specific sources of climate change disinformation in the two selected examples of satirical climate change comedy. The immediate context for his *Statistically Representative Climate Change Debate* is complicated. Oliver responds to the ongoing political polarization of global warming and a plethora of polls revealing continuing American skepticism. Despite the publication of Cook et al's (2013) comprehensive bibliometric study, the comedian addresses the rejection of scientific

consensus and the climate change hoax still promoted in the radicalized right media ecosphere, especially by the Fox News Channel.

The context of and motivation for John Oliver's second segment is more specific: the landmark 2015 Paris Agreement as well as President Trump's various threats of withdrawing from it. This agreement allocates "common but differentiated responsibilities" (p. 1) to developed countries (the biggest GHG emitters) and developing countries and aims to "strengthen the global response to the threat of climate change" while promoting sustainable development and working to eradicate poverty (p. 3). Its main goal is limiting the overall global temperature increase to 1.5C, a cap that would significantly reduce the impacts of climate change (p. 3). One of the final sections, Article 27, clearly states that the agreement cannot be amended or negotiated like a typical contract. That is, countries wishing to terminate their involvement must request to withdraw no earlier than three years after signing and leave at least one year after this notice (p. 25). The United States, which officially enacted the agreement on Nov. 4, 2016, may notify to withdraw no earlier than November 2019, and leave no earlier than November 2020.

The more specific background of Oliver's video is the president's June 1, 2017 speech that the United States was leaving the accord. President Trump cited these main reasons for his decision: U.S. citizens and businesses will suffer under the accord whereas China and India will benefit; America has disproportionately contributed to the Green (Climate) Fund; and the estimated temperature change from reduced GHG emissions is .2C, a "tiny, tiny amount." The president also asserted that he was elected "to serve the citizens of Pittsburgh, not Paris." In his speech, President Trump framed the Paris Agreement in terms of various conflicts, such as the prosperity of the U.S. against that of

the world and the American economy versus the environment, while appealing to the values of ethnocentrism, American exceptionalism, patriotism, and fear. However, his bold statement about proudly representing Pittsburgh, not Paris, was summarily countered by Pittsburgh mayor Bill Peduto himself. Peduto asserted that he would not only heed the guidelines of the Paris Agreement, but also transition his city towards 100% renewable energy by 2035 (Climate Action, 2017). With Hidalgo, the mayor of Paris, Peduto also penned a column in *The New York Times*, condemning how President Trump had pitted their cities against each other when both “share a desire to do what is right for our citizens and our planet” (Hidalgo & Peduto, 2017). Likewise, as if to distance themselves from the president’s stance, General Motors and Ford announced that they would continue their efforts towards sustainability, in both their daily operations and long-term plans, honoring the goals of the agreement (Wayland, 2017).

The satirical climate change comedy of John Oliver is quite complex. In satire, again, the persona is the mask/disguise worn by the speaker; this mask may be *close to* or *at several removes from* the speaker’s actual voice. Oliver, similar to Stephen Colbert, is a host adopting the persona of a pundit, but occasionally this mask slips, and we believe we are hearing the *real Oliver*. On his program, Oliver sits front and center, his head blocking out the rest of the stage, the sole focus of viewers’ attention. As a pundit, he delivers his commentaries with comic flair, voice changes, and exaggerated gestures, often breaking into rants and/or using physical humour. After analyzing several of his commentaries, I have determined that, in various ratios, they contain certain repeated strategies: jokes, targets of satire, snippets of information, and calls to action. All of these types of content are either accompanied or interrupted by visual elements, which add to the fast pace and

complexity of his satirical comedy. Whereas these elements are explained below, for a more thorough dissection of both videos, please refer to the prose tables in Appendix B.¹¹

- **Jokes:** These are the segments in which Oliver is almost or completely entirely comedic, with the humor ranging from silly to obtuse. When in fun, Oliver tells jokes, makes snide comments, uses exaggerated gestures and facial expressions, states ridiculous statements/incongruous comparisons, mentions logical fallacies, and so on. For instance, Oliver compares President Trump’s misleading claim about the Paris Agreement’s harmful effects on the United States to the absurd claim that the cost of this accord is similar to that of “ducks wearing jean shorts” as well as “five fish and a dump truck full of hamsters.”
- **Targets of Satire:** These are the segments in which Oliver pinpoints his satirical targets, whether they are the media, media figures, political elites, events, fabrications, and so on. Oliver often includes clips of political elites speaking, allowing their own words to be used as evidence against them.
- **Information:** In these sections, Oliver supports his arguments and/or refutes faulty points and/or misrepresentations by providing evidence from very credible sources, such as reports, newspaper articles, televised news segments, experts, and so on. These sources are usually accompanied by images so that audiences may visualize and verify them. When delivering this information, Oliver may or may not be serious; that is, information may be delivered as a sarcastic refutation.
- **Calls to Action:** These are the statements in which Oliver reaches out to his audience and beyond, encouraging people to recognize the crisis of climate change (or other current affairs issue), stressing solutions, and/or asking for calls to action.
- **Visual Elements:** Oliver keeps the pace fast, if not frantic, by incorporating several visual elements in his monologues: charts, pictures, screenshots, and short video clips. Oliver situates himself in the worlds of pop culture, journalism, and science by including images of celebrities, video clips of newscasts, and screenshots of important climate change stories and reports.

Oliver’s five-minute-long *Statistically Representative Climate Change Debate* is constructed as follows: over two minutes and forty seconds consist of jokes or sarcastic

¹¹ Oliver’s satirical comedy is far more complex and cognitively challenging than Kimmel’s, which does not rapidly switch back and forth between various types of content. Therefore, in Appendix B, readers will find deconstructions for only Oliver’s two selected segments.

refutations, an amount largely attributed to the dominant visual gag at the end (the accurate climate change debate). The remaining 100 seconds is almost evenly divided into snippets of information and specific satirical targets. Although there is no explicit call to action, Oliver implies that media organizations should more responsibly frame climate change and that audiences should not be duped by these false debates.

Oliver's monologue opens with a hook that references popular culture: a joke calling the Earth that "blue thing that Bruce Willis is always trying to save," the other member of "Wind & Fire," and the home of George Clooney. After mentioning an unsettling White House climate change report, Oliver jests about Americans' failure to assess climate change risk (an "inability to be trusted with the future tense") before disparaging unnecessary climate change polls: "you might as well have a poll asking which number is bigger: 15 or 5?" or "Are there hats" or "Do owls exist?" He then reaffirms the climate change crisis through five visuals: a chart of global temperatures rising, a screenshot of an extremely hot weather forecast, a graph of increasing sea temperatures, a report on melting ice sheets, and "the obligatory picture of a polar bear balancing on a piece of ice." After providing a screenshot and summation of Cook et al's study, he contrasts this consensus with continuing American skepticism. Interrupting Oliver's jokes, then, is significant and accurate climate change information.

The comedian's satirical targets in this short segment are many (President Obama's delayed climate change action, Americans' persistent climate change skepticism, and stale media coverage of climate change's effects), but he aims his sharpest arrow at the commercial press (represented here by CNN, Fox, and NBC) for their ludicrous, mathematically false disputes between Bill Nye "the science guy" and various random,

uninformed climate-change deniers. He critiques these debates for their split screen visuals, which misrepresent those affirming climate change as equal to those denying it, a tactic exacerbating public confusion. Although Oliver does not label the error, what he is critiquing here is the false balance fallacy, which occurs when two sides of an argument, regardless of their evidence, are falsely represented to have equal value and weight. He corrects this flaw in his segment's concluding joke in which he introduces one climate change denier and then Bill Nye, but, in the interest of "fairness" and accurate mathematical representation, he brings out two other skeptics and 96 other "scientists." The crowded, chaotic stage is a visual representation of a balanced debate between three climate change deniers and 97 scientists.

Oliver's much lengthier (almost twenty-minute-long) segment on the Paris Agreement is equally complex. Delivered just three days after President Trump's anti-Paris Agreement speech, the almost frenetically paced monologue shifts between four kinds of content. It contains fifty-five discrete segments with the shortest five seconds long, the lengthiest fifty-six seconds, and the average length twenty-two seconds. Here is an overall breakdown of the video's content: jokes/sarcastic refutations (31.5%), targets of satire (22.8%), information and clarification (42%), and persuasion/civic action (3.7%). (A complete dissection of this segment appears in Appendix B). To keep the audience entertained, Oliver regularly interrupts his monologue with jokes, hyperbolic comparisons (the only worldwide conspiracy is that of the Olsen twins), pop culture references (the box office disaster of the film 2012, allusions to celebrities), and several visual elements.

Despite the rapidly shifting segments, most of this video's content is comprised of information. Oliver's main goal is informing his audience about the Paris Agreement and

associated key concepts, such as the Green Climate Fund, the carbon budget, and greenhouse gases. Oliver clarifies both the document's broader aims and finer details, stressing that despite its faults, it is not a bad deal that the U.S. may freely renegotiate. He also disproves several erroneous claims about the agreement's impact by combining opinion and evidence. To rebut the assertion that this accord will hurt American businesses, he offers a full-page letter in *The New York Times* in which twenty-five companies, including the behemoths Intel, Microsoft, and Unilever, urged the president to remain in the Paris Agreement. He discounts the president's claim that the U.S. is the most environmentally friendly country on Earth by citing that it has the highest GHG emission rates as well as a long history of atmospheric pollution. To the argument that China will continue using coal at the detriment of America, Oliver references a newspaper story that explains China's commitment to renewable energy infrastructure. Most importantly, he stresses that America's withdrawal from the accord may force other countries to ignore their promises, which could be catastrophic for both the United States and the planet. To substantiate his argument, he used respected, expert sources: Dr. Michael Oppenheimer, the Paris Agreement document itself, a PBS documentary, articles from *The New York Times*. Two radio interviews with two climate-change skeptic senators are also used as evidence of the GOP's climate-change-denial problem. However, he switches from informing to persuading in the monologue's conclusion when he urges his audience to research their local representatives' stances on climate change. If Americans are to bypass the Republican Party's skepticism and make progress on addressing climate change, they must vote to remove climate-change denying leaders from office.

The *Paris Agreement*'s visuals are more abundant (over 100 graphical elements) and complex than those in his *CC Debate*. In the *Paris Agreement* segment, two kinds of elements both interact and clash: serious, slowly-paced visuals that prove Oliver and his team have done their research as well as silly, fast-paced ones that safely situate the host in the world of humour. For instance, Oliver adopts a more solemn tone when he pauses on screen captures from video clips—such as one of a disgruntled Angela Merkel critiquing the impact of President Trump's decision to leave the accord. These pauses not only elaborate on previous content, but also allow the audience to digest the information, in case viewers want to follow up on it. Oliver also decelerates when using visual elements presenting new information and/or correcting fabrications, such as the several minutes he spends on debunking the president's mistruth that the Green Fund would cost the U.S. *billions* of dollars. The pace is also slackened when newspaper articles, white papers, and scientific sources are introduced and explained. So that the audience may access these references, their dates and/or provenance are all visible. Oliver also controls the chaos by repeating an exaggerated graphic of a fiery planet over twenty times (Figure 3 in Appendix A), a tactic that returns the focus to him and the global consequences of leaving the Paris Agreement. Despite the wealth of information here, Oliver's monologue is nonetheless tempered by entertaining moments. Somber statements and their corresponding clips are often interrupted by quick flashes of pop culture images (Bjork, Paul Rudd, Foo Fighters) and ridiculous visual gags (the smoking French bulldog as the mayor of France), which enforce the punchlines and provide temporary comic relief. The ridiculous verbal and visual evidence also permit Oliver to fall back on his claim that he is neither a journalist nor an activist, but merely a comedian making well-researched jokes about the news.

As powerful as Oliver's message is, what compromises it here is the slipperiness of his satire. Oliver's main targets are the president's mistruths, such as those that the document is a "bad deal" for the American economy, that the agreement is negotiable, and that China and India will continue polluting. However, while critiquing and correcting these fabrications and the damage they cause, Oliver also makes several ad-hominem attacks on President Trump, such as pointing out his lack of fitness and his love of junk food. A picture of the president's bathrobe-wearing-self reclining on a bed is used as evidence of the leader's total immunity to shame whereas his paranoid response to the Paris Agreement's celebration prompts Oliver to call him a "f--king egomaniac." The verbal assaults of President Trump comprise only three minutes of Oliver's almost twenty-minute monologue. However, because these attacks are followed by critiques of the whacky theories of Scott Wagner and Larry Pittman, it may seem that Oliver's genuine focus is Republican politicians rather than climate change disinformation. This ambiguity is heightened because of the cognitively challenging content and fast-paced delivery of Oliver's message. As a result, viewers may land on his minor satirical targets, misinterpret his serious ones, and bypass or misconstrue his overall message.

In short, Oliver's method in both of these monologues is complex. He almost effortlessly switches between four roles: comedian, satirist, citizen science communicator, and citizen activist/political commentator, never letting the audience rest, let alone lose interest. The informative content, satire, quick pace, and embedded visuals of his speeches aid in their circulation and virality, but also in their possible misinterpretation.

5.4 Kimmel's Satirical Comedy: Contexts and Texts

Similar to Oliver's earlier debate segment, Kimmel's monologue and his subsequent satirical video *Scientists on Climate Change* also respond to an erroneous representation of climate change, one from the Mark Morano-produced and Sarah Palin-endorsed documentary *Climate Hustle*. Released in a selected (400) theatres on May 2, 2016, the same evening as Kimmel's segment, this documentary was partially funded by the powerful conservative organization Committee for a Constructive Tomorrow (CFACT), which advocates free market approaches to environmental issues and spreads the message of the climate counter-movement.

A summary of the narrator, structure, argument, and sources of *Climate Hustle* helps explain the film's potential persuasive power. The film's narrator, Marc Morano, has a long history with far-right conservatism (as Rush Limbaugh's man in Washington) and climate change skepticism. With Senator James Inhofe, Morano has helped promote the myth that human-caused global warming is a hoax created by liberal alarmists and progressive scientists; he has also claimed that celebrities are unethically using their power and narrative-crafting to "indoctrinate" youth with climate change propaganda (Desmog). Morano's current website, www.ClimateDepot.com, for which he is executive director and chief correspondent, is dedicated to promoting climate change denial, exposing (what it considers as) ridiculous environmentally friendly proposals and practices, endorsing Morano himself and his new book (*The Politically Incorrect Guide to Climate Change*), and advertising and selling *Climate Hustle*. For all these reasons, then, Morano is listed as one of seventeen top "climate killers" by *Rolling Stone Magazine*, as well as a "central cell

of the climate-denial machine” (Davies qtd. in Dickinson, 2010). *Climate Hustle*, then, is just one of Morano’s recent vehicles of climate change denial.

Climate Hustle repeatedly critiques the 97% consensus, the urgency of climate change messages, and the cult of the climate change movement. Morano also frames climate change policies as government overreach, socialism, and removal of personal freedoms. After a sarcastic opening—“No carbon credits were purchased to offset the production of this film”—the film then attacks what it perceives as the televised climate-change fearmongering of various public figures and celebrities. It presents a selection of news anchors and public figures, their heads placed in old-fashioned television screens, all making catastrophic announcements about climate change. Tom Brockaw worries that “New York could be abandoned, its favorite landmarks lost to the sea” whereas Al Gore stresses that we are in “a planetary emergency.” After these TVs disappear, the screen fades to black, and the word “CLIMATE” appears, each letter containing an image of the predicted crisis. Then, the red word “HUSTLE” violently stamps the screen, shattering the word CLIMATE, an effect demonstrated in Figure 4 (Appendix A). Posing as narrator, investigative reporter, and sympathetic citizen, Morano emerges, confirming that a “growing numbers of experts” evaluate action on climate change “as a sleight of hand” comparable to a game of three-card monty. Here, then, is the film’s unsubtle argument: climate change fear is an alarmist hustle, a sleazy card game in which scientists refuse to show their hands (the hard evidence) to the duped, unsuspecting players (the American public). Unlike the climate hustlers (governments and scientists), Morano and his team will reveal all his cards and demonstrate the truth.

Despite the exaggerations, Morano works hard to lend his documentary the appearance of credibility. Over two dozen scientists appear, who all have or have had university affiliations, and who are all willing to share the truth about climate change. Dressed professionally while in office settings, the film's scientists have PhDs in various disciplines and have led departments (Dr. Botkin; Robert Carter; Dr. Judith Curry). Some were involved with the Intergovernmental Panel on Climate Change (IPCC) report as authors and reviewers (Dr. Patrick J. Michael; Dr. Richard Tol); others have made but now regretfully recant their fearful climate change predictions (Dr. Sallie Baliunas; Judith Curry; Dr. Caleb Lassiter; Dr. James Lovelock). The climate change "heretics" who are quite politically progressive are highlighted—Denis Rancour, Judith Curry, James Lovelock, and Caleb Lassiter—to counter the stereotype that all skeptics are conservative cranks with ties to Big Oil. The film also minimizes its far-right politics and connections to conservative organizations. Contrasted with the open interviews with outsider skeptic scientists is the depiction of the singular representative of AGW, leading consultant on global climate change policy Dr. Michael Oppenheimer. When addressed, Oppenheimer ignores Morano's questions. His silence unfortunately reinforces the film's sub-theme of arrogant establishment scientists who are unwilling to explain the evidence confirming climate change.

Although hardened climate change skeptics may watch this film and have their biases confirmed, those on the fence might still interpret Morano's argument as centrist and convincing. Compared to other skeptics, such as Limbaugh and O'Reilly, Morano avoids ranting and finger-pointing, developing a measured, almost staid persona. He speaks calmly, and limits his editorializing. He spends only three minutes directly attacking

climate change as a cause celebre and iterates that his viewers must weigh the evidence and ultimately decide for themselves whether they are being “hustled.” The film’s rather shoddy look—bad quality graphics, awkward uses of green screens, shaky props, and abrupt transitions—add to its appearance of sincerity, its ethos. Rather than a celebrity-endorsed big budget climate change documentary such as *An Inconvenient Truth*, Morano depicts *Climate Hustle* as a low-budget film created by beleaguered maverick scientists, one lone investigative reporter, and concerned citizens attempting to improve climate change awareness. The amateurish (and sometimes embarrassing) production values also hide the film’s connections to conservative thinktanks.

The context of Kimmel’s second 2018 video *Hey Donald Trump -- Climate Change Affects You Too* is similar to, but perhaps more urgent than, that of Oliver’s Paris Agreement video: President Trump’s continuing refusals to back down from his earlier June 2017 announcement about U.S. withdrawal from the Paris Agreement as well as the leader’s recent dramatic rollbacks of important environmental protections, which were discussed at length in Chapter 1. In other words, Kimmel responds to President Trump’s seemingly systematic program to dismantle all of President Obama’s environmental policies, and, essentially to speed up rather than slow down climate change.

Just as Oliver has perfected the format of an extremely fast-paced, highly segmented satiric speech, Kimmel has honed his own structure for commenting on public affairs issues. His strategy, which I have induced from watching a few similar videos, is delivering a leisurely paced, personally inflected, monologue in which he introduces the controversy/problem, names the key players, mixes satire and comedy, and corrects mistruths. Whereas Oliver rapidly switches back and forth between various types of

content, often making lengthy and absurd digressions, Kimmel's monologues are far more methodical and linear. In contrast with Oliver's information heavy and rapid-fire monologues, Kimmel's speeches contain fewer facts, which are then repeated. Kimmel is also far more relaxed in his delivery; he speaks slowly, spreading out and sometimes circling back on/repeating his jokes, becoming slightly more animated towards the end of his monologue.

The graphics of Kimmel's segments are likewise minimal compared to those of Oliver's monologues. Kimmel is the main visual element: a comedian wearing a suit while delivering a monologue in front of a live studio audience. In his *Scientists on Climate Change* opening, for instance, he stands against a backdrop of a darkened Los Angeles, with a segment of the lighted stage on our left and the famous Hollywood sign clearly visible in the upper right corner. The background is so dark, in fact, that Kimmel's suit almost blends into it, making his white shirt, hands, and head disembodied. The comedian looks straight into the camera, breaking occasionally to look towards his left (our right) and sometimes, but rarely, to his right (our left) while delivering a speech, sometimes awkwardly, to a live audience.

This format was first highly successful in his *Message to the Anti-Vaccine Movement* (Feb. 27, 2015), which still remains one of Kimmel's most popular videos (over 8.7 million views). Because I have completed previous research on this video (Galliah, 2020), I refer to it here in order to analyze Kimmel's informative satirical comedy, which usually proceeds quite methodically, according to these components.

- **Context/Problem:** In the monologue's opening, Kimmel introduces the problem he is addressing or the context of his speech, such as "the sizable group of people

who are choosing not to vaccinate their children. There are schools in which 20% of the children aren't vaccinated."

- **Information:** Kimmel uses simplified language while summarizing select sources for evidence. In this vaccine movement speech, for instance, he explains the concept of *herd immunity* without using the scientific term. Kimmel stresses the expertise of doctors and the harmlessness of vaccines.
- **Jokes:** Kimmel often ends serious sentences with punchlines or inserts jokes between factual statements for comic relief. For instance, he explains that Hollywood celebrities, who are spreading vaccine disinformation, "are more afraid of gluten than they are of smallpox" to get a laugh before proceeding with serious announcements about recent outbreaks of measles.
- **Satirical Targets:** These are the direct subjects of Kimmel's criticism, central to the problem. In this case, they are Hollywood celebrities, those who ignore doctors' advice, and the anti-vaccine movement. His most obvious target, however, is those parents who are afraid to vaccinate their kids, whom he repeatedly addresses.
- **Addresses to the Audience:** Kimmel regularly speaks to both his studio audience and those at home by calling them "you." This "you" is complicated; it may be both the "rational" you of the audience who agrees with his arguments or the "you" who is the target of his jokes/satire. In these moments, Kimmel may become self-deprecating, advising his audience to ignore him but to listen to the experts.
- **Segue:** Here, Kimmel summarizes the problem once again before introducing a video. If the video contains experts, Kimmel stresses their credentials by reminding his viewers that the people "you are about to see are not actors," but scientists, doctors, and so on. At the end of this segue, he urges the audience to keep an open mind and pay attention to the following message.
- **Parodic PSA:** Following the monologue is a Public Service Announcement (PSA) that parodies the conventions of the PSA. This PSA, which may contain experts, celebrities, and/or children, combines information, comedy, and, often vulgar language. PSAs containing authorities may begin with the disclaimer: "The following people are not actors." After the experts announce themselves and their credentials, they refute the controversy, provide correct information, grow more frustrated, swear at the audience, and then announce directives. The video closes with the standard PSA message: paid for by X, but in this case, it is "paid for by experts who know more than we do."

Kimmel adopts this approach in his longest example of climate change messaging:

Scientists on Climate Change. He begins his speech by mentioning that Sarah Palin (his

first satirical target) has been recently promoting an anti-climate change documentary before cutting to an interview with her (courtesy of *The Guardian*) in which she urges Americans to question the inconsistent facts that are “being produced and being fed, especially to our children when it comes to global warming. . . or . . . climate change—whatever they’re calling it today.” Palin also points to greater problems: the denial of climate change as propaganda as well the common myth that “global warming” has now been rebranded as “climate change.” Kimmel then interrupts Palin’s interview to joke that her comment “was one sentence, one very long, dumb sentence” before letting the ex-governor continue, unfiltered. To correct her denial, he stresses the 97% scientific consensus before affirming that climate change is not a matter of political opinion, but one of scientific truth. He refutes Palin’s doubt with facts about the warmest years on record (2014, then 2015) and then remarks that the only person who will appreciate climate change is Aqua Man.

In a very short time, then, Kimmel presents the problem of climate change denial and suspicion of scientific expertise, his satirical targets, accurate information, and several jokes. A dissection of Kimmel’s monologue reveals the following breakdown of segments: context/problem and information (126 seconds); jokes/silly remarks (80 seconds), satirical targets (66 seconds), addresses to audience (10 seconds), directives to watch the subsequent video (20 seconds). The categorization is approximate because segments are often blended together by Kimmel’s snarky comments or jokes. For instance, after stressing the 97% consensus, Kimmel remarks that this number is significant because 97% of scientists rarely agree on anything: “Even 1/5 of dentists don’t agree on sugarless gum.” This faulty comparison intensifies the consensus as well as acts as comic relief.

Whereas Oliver bombards his audience with layers of information, Kimmel delivers a more seemingly unsophisticated message. He paints in much broader strokes, sticking to a few repeated facts and arguments. For instance, he does not focus on the details or the deceptive tactics of the documentary *Climate Hustle*, nor disparage its creator and narrator, Mark Morano. By not deconstructing its elements, Kimmel seems to signal that the film is not worthy of his time nor that of his viewers: it is just another example of climate-change-denying propaganda. (Given the structure of Oliver's segments, it is not difficult to conceive that Oliver would have taken a different approach. That is, I can imagine Oliver dedicating a full twenty minutes to analyzing the film's mistruths, exposing the notorious thinktanks behind climate change denial, and, finally, mocking the film's shoddy production values for comic relief.) He targets only the documentary's main argument and generalizes about the powerful forces behind its dubious claims, such as those "companies who make pollution for a living." He zeroes in on the evidence for climate change: the warmest years on record, the greenhouse effect, the scientific consensus, and NASA reports. He mainly critiques those who are erroneously framing climate change in terms of conflict: Republicans versus Democrats, climate change scientists versus outsider scientists, caring for the environment versus protecting industry. These frames are confusing Americans, making them hypocritically distrust scientific expertise. A frustrated Kimmel asks, "Why do we believe in scientists when it comes to molecules and the speed of light, but not this? It is because members of Congress who we don't even like, by the way, because people who take money from companies who make pollution for a living told us not to worry about it."

Unlike Oliver, who demonstrates his research by controlling the message and weaving in several references, many from scientists and the legacy press, Kimmel openly acknowledges the risks he is taking here. He acknowledges his previous lowbrow comic history, his inability to speak about climate change specifics, and the need for he and others to listen to experts. He accepts that for raising this matter, he will be “beaten over the head by every whacko website, and I know there’ll be a lot of “what the hell do you know? Go back to girls jumping on trampolines. This is not about what I know; this is about what scientists know.” After recognizing that he is not the most informed climate change communicator, he requests that his audience put partisan politics aside and listen closely to the following message, which is not from an “imaginary conspiracy,” but from scientists, “who are just like us, albeit a smarter version.” In his five-minute monologue and parody preview, the comedian seamlessly blends information, levity, and satire, aiming his largest arrows at the irrationality of Americans, climate change skepticism, the political polarization of climate change, and the distrust of scientific expertise.

Kimmel’s monologue is then followed by a short parodic PSA (one minute and 53 seconds long) that supports and intensifies his previous message. He requests that his viewers forget their party affiliations and listen to the following message. The screen then shifts to what appears to be a generic PSA, which opens with a shot of the sun on a dark horizon, muted piano music, and this somber message—“THESE PEOPLE ARE NOT ACTORS”—before progressing to the scientists’ formal introductions. The scientists who participate in this video are the following: Aradhna Tripathi, paleo climatologist and isotope geochemist; Alex Hall, climate scientist; Jeremy Pal, hydro climatologist; Nina Karnovsky, polar ecologist; Chuck Taylor, environmental analytical chemist; and finally, John Dorsey,

marine environmental scientist. Two of the scientists in the skit, Hall and Pal, were authors of the then recent IPCC report. Next, these scientists continue refuting climate change doubt by delivering parts of one sentence about climate change's causes ("human beings" and "that's you and me") and its consequences, which could be "extremely dire" (Alex Hall), "catastrophic" (John Dorsey), and "apocalyptic" (Karnovsky). The video then slows down to zoom in abruptly on Tripati: "And here's the thing, when we tell you all this, we're not f--king with you." The scientists urge that they are not pranking the public, and that if they were, they would use a better joke than climate change: "I'd probably tell you a meteor was coming and try to sell you a helmet" (Tripati). After this startling shift of tone, the scientists stress that they, too, are part of the global warming problem—it's "caused by you and me—before dramatically stating some of the its severe repercussions and reconfirming "we're not f—king with you." The video concludes with an almost cliched shot of a child sitting on Tripati's lap. A straight-faced Tripati implores, "Believe us, if not for our generation, then for his." The young boy interrupts the somber moment with this threat: "You mother--kers better not f--k this up." His startling comment is followed by a shot of the earth and this message, "PAID FOR BY PEOPLE WHO KNOW MORE THAN WE DO" and the website www.globalchange.gov. Kimmel's monologue and the subsequent video stick to the same messages: global warming is not a conspiracy but is a human-caused environmental crisis upon which the majority of scientists agree. Rather than heed politicians' propaganda, such as that found in the film *Climate Hustle*, Americans should listen to scientists with expertise on climate change.

Kimmel conscientiously attempts, at least in this segment, to appeal to viewers across the political spectrum by stressing that climate change does not care about

Americans' politics nor whether they believe in it. Admittedly Palin, one of Kimmel's major targets, receives ample condemnation for her support of Morano's film, but Kimmel avoids direct ad-hominem attacks against other politicians and instead targets the larger climate-change-denying power structure: unnamed members of Congress and fossil fuel industry lobbyists "whom we don't even like by the way." In other words, he lets the viewers identify Republican climate change skeptics themselves and make a choice about whether to agree with them. In contrast to Oliver's almost snarky debate ending, Kimmel does not step in; his scientists and the website providing more information have the last words.

Karnovsky, Hall, and Dorsey all agreed to appear on Kimmel's program because of how this segment cleverly exposes the false message that climate change is a hoax created by scientists to ensure their subsequent funding (Yarbrough, 2016). Although she was previously unfamiliar with Kimmel, and was not sure about the appropriateness of comedy for climate change, Karnovsky volunteered because in the "places I work, the Arctic and the Antarctica, I have seen these changes. . . I have seen starving polar bears. Glaciers I used to walk over, I now walk in front of, because now they have shrunk so much" (Yarbrough, 2016). Karnovsky admitted her interest in "alternative narratives" that might help get the climate change message out.

Kimmel's other segment on climate change disinformation, *Hey Donald Trump -- Climate Change Affects You Too Affects You Too* (from August 4, 2018) is quite different in its tone and shift to the left, Kimmel feels it is no longer necessary to flesh out the context or to treat his targets gently. In this monologue and PSA, he is more vocal about condemning the Republican political administration for its climate change denial and

pinpointing its current leader: President Trump. He begins by solemnly addressing the problem of climate change before quickly targeting Republicans and the fossil fuel industry. Then, he provides more information about the dramatic effects of global warming: record CO2 levels, abnormally hot global temperatures, massive Arctic ice sheets melting, and, more locally, July 2018 as the hottest month ever recorded in Southern California. Kimmel then chastises President Trump for not only ignoring this environmental crisis, but also “rolling back regulations that were designed to slow it down,” which is “bigly important stuff.” Kimmel’s targets move from industry to Republicans to the president himself who embodies climate change denial.

After asserting that somebody needs to get through to the president, “who lives in this world, too,” Kimmel introduces his parodic PSA, which begins with a speaker announcing the climate is in crisis over an image of the devastating Californian wildfires. Then, a direct (but comic) appeal is made to President Trump and his interests: “Scientists say that by 2050, 80% of the world’s coastal golf courses could be submerged.” Waterfront clubs will be inundated, and inland droughts will dry up fairways and putting greens, making them “unputtable.” The video then takes a deeper dig at the president—as well as a more ridiculous turn—by suggesting that climate change will create shortages of fried chicken (Kentucky wide) as well as dry up young women wishing to have affairs with older men. The speaker urges that the president act to preserve the most important treasures of all—his handicap and his real estate—before ending with a picture of him surrounded by Playboy Bunnies. The video ends with this message: “PAID FOR BY AMERICANS FOR WHATEVER THE F**K IT TAKES.”

As ludicrous as this video is, it does mention several effects of climate change—flooding, drought, and extreme weather. Its satirical targets are also several: the president’s notorious love of golf, his obsession with his investment properties, his public presentation of climate-change denial, his love of Kentucky Fried Chicken, and his publicized and unpublicized dalliances with younger women. Still, it seems that the president and his values are clearly the satirical targets here whereas climate change messaging is the by-product of Kimmel’s message.

As the previous examples demonstrate, both hosts take their climate change messaging seriously—Oliver with his highly detailed and researched longer monologues and Kimmel with his smaller, but perhaps chancier, climate change segments. Both also have satirical climate change comedy segments whose contexts are broad: Oliver stands up for the scientific consensus on climate change while attacking false balance; Kimmel acknowledges the climate change crisis while attacking the Republican party’s stand on the environment. Similarly, both ground longer messages in very specific contexts, whether they are President Trump’s announcement of withdrawing from the Paris Agreement or the release of Morano’s documentary *Climate Hustle*. Despite the differences in their satirical climate change comedy, and in their personalities, both Oliver and Kimmel dedicate more time to providing accurate climate change information than to telling jokes. They also pinpoint and reject persistent climate change fabrications: that scientists are exaggerating the evidence for climate change, that global warming is a conspiracy, that the scientific consensus is a hoax, and that there are two equivalent sides to the climate change debate. They also draw attention to the nefarious ways that false equivalency is used to stall action

and policies on climate change: it's either America or the world, the economy or the environment, the fossil fuel industry or renewables.

The hosts differ, however, in their tones, delivery, and depth. Kimmel, who provides more general information, comes off as a measured, slightly frustrated comic who has been forced into taking a stand on climate change. He avoids citing the legacy press and is most comfortable summarizing and simplifying general information, paraphrasing scientific terms, and relinquishing the tougher claims to the scientists. Kimmel's parodic PSAs almost act as devices buffering him from the scientists' messages: don't listen to me, but to the real experts. This tactic might be attributed to his program being on a major network and to his different, perhaps more conservative, fan base (Hiebert, 2016). Oliver, on the other hand, is relaxed as the authority; though he weaves sources in, he remains in tight control of his complex, fast-paced argument. Kimmel appears as the concerned, yet calm, comic and everyday American citizen whereas Oliver is the frantic political commentator who has no limits on what he will or might say: at any moment, he might break into rants, epithets, and physical humor.

5.5 Positive Reception of Oliver and Kimmel on the Internet

Because both comedians seem to appeal to very different audiences when they correct climate change disinformation, I tracked the online circulation and reception of their videos during the first week of their release (Please refer to Chapter 4 for more details on the methodology.) By focusing on their appearance on four main types of websites—commercial news/magazine sites, entertainment/news aggregator sites, activist websites, and blogs—I discovered that these videos were received and used in several ways, which

all speak to the impetus of satirical climate change comedy. In this section, I focus on the neutral to positive coverage of these videos.

5.5.1 Commercial News Sites and Respected Magazines

On commercial news sites, writers reference these videos so that they may further deliberate on the climate change crisis as well as substantiate their own expertise in as well as their publications' investment in accurate climate change coverage. When these videos become entry points for conveying additional accurate climate change information, writers take stands on whether Oliver and Kimmel are acting as journalists, comedians, or both.

In the first week that Oliver's *CC Debate* video circulated around the internet, several major and minor news sites rank Oliver as not a comedian, but as a journalist and earnest climate change communicator (Suebsaeng, 2014). During this time period, there are also several short pieces applauding Oliver for his investigative work in skewering false balance and for targeting the media's inaccurate representation of climate change (Fung, 2014; Hance, 2014; McKinnon, 2014; Wemple, 2014). In the stories from major news sites, many subordinate Oliver's role as a comedian; only two refer to Oliver's program as a fake news show (Romm, 2014; Loria, 2014). Despite this label, Romm aligns himself with the comedian by comparing Oliver's statistically representative debate with his own critique of how CNN, Reuters, Bloomberg, and even PBS irresponsibly gave significant airtime to climate change skeptics Muller, Inhofe, and Watts. Similarly, Loria downplays Oliver's comedy, but lauds his communication skills.

Writing for major news publication sites, three well-known authors mention both Oliver's and Kimmel's satirical climate change comedy to allude to their own work as well

as their publications' efforts in correcting climate change dis and misinformation. Chris Mooney (2014), renowned author of *The Republican War on Science* (2005), commends Oliver for effortlessly distilling how the media's phony false balance "enables the scientific fringe to hijack reality." The most approving coverage comes from Dana Nuccitelli, who refers to Oliver's viral video as "the best climate change debate you'll ever see" because it illustrated in four minutes what he and Chris Mooney had been trying to articulate for over a decade. After summarizing several of Oliver's shrewdest tactics, Nuccitelli also references his own previous work, provides readers with evidence of climate change consensus, points readers to the website Skeptical Science, and includes internal links that establish his own home paper *The Guardian* as a valid source of CC information. Mentioning Oliver's video also allows him to take a stand on the BBC, whose false balance reporting, according to him, is rapidly transforming the network into the Fox News of Britain.

Even those writing for major news and magazine sites that downplay Oliver's journalistic skills still appropriate his *CC Debate* segment as an attention grabber or an entry point into other more serious climate change stories, such as Beck's (2014) piece from *The Atlantic*, which links to articles from *The New York Times* as well as IPCC and NASA reports; and stories by Matthews (2014) and McKinnon (2014) that refer to consensus studies by both Cook, Anderegg, and the recent IPCC climate change report. Guerrasio (2017) (*Business Insider*) similarly downplays, if not ignores, Oliver's humor in his *Paris Agreement* segment to describe him as a journalist who "delved" into the president's decision to leave the accord while carefully explaining the significance of the world's carbon budget: Oliver did not joke, but *delved, pointed out, explained, touched on,*

said. This neutral language also implies a contrast between Oliver's responsible analysis of the Paris Agreement and the president's reckless fabrications.

When Oliver's monologues are covered in the entertainment sections of online newspapers and magazines, they are still treated as journalism and/or science communication. One of the longest stories on Oliver's *Paris Agreement* appears in the Television section of *Time*, yet its optics signal serious story: a linked video of President Trump's Paris Agreement speech and a summary of its content introduce Oliver's monologue as a weighty commentary on the president's recent actions and dangerous decisions. Instead of a discussion of Oliver's humor, there is significant elaboration on and approval of his corrections to President Trump's speech, supported by internal links to *Time*'s other stories. Once again, Oliver's segment is mentioned not only to praise his accurate televised climate change communication, but also to re-enforce *Time*'s own integrity and serious investment in CC coverage (Locker, 2017). Similarly, Jensen's article from the ENTERTAIN THIS! part of *USA Today* approves of Oliver for painstakingly "fact-checking" the president's speech for inaccuracies (2017); Reed's (2017) piece from *The Rolling Stone* similarly praises Oliver for breaking down the commander-in-chief's speech "point by point, while attempting to suppress his rage." Aizenman (2017) commends Oliver for bringing attention to the previously unknown but important Green Climate Fund.

Kimmel's *Scientists on Climate Change* segment, however, is discussed less frequently by mainstream news sites. During the week after its release, the most laudatory article is written by John Cook (2016), who applauds Kimmel's monologue and PSA as effective comedy and "one of the better pieces of climate communication I've

encountered” before analyzing its context. Kimmel’s segment provides Cook with an opportunity to enforce the scientific agreement on climate change, discuss the problematic consensus gap, and historicize climate change denial. After acknowledging that Kimmel’s piece did, unfortunately, publicize *Climate Hustle*, Cook (2016) extols Kimmel’s approach, which “is entirely consistent with the advice of communication experts.” In other words, Cook implies that Kimmel was acting as an effective climate change communicator.

5.5.2 Entertainment and News Aggregator Websites

More so than Oliver’s satirical climate change comedy, Kimmel’s segments are treated more as comedy on such entertainment aggregator sites as funfun.tv.com, etcanada.com, clipzui.com, woxy.co, latest.com, addictinginfo.org. For his *Scientists on Climate Change* segment, Kimmel is complimented for “dropping the mic” on climate change confusion and for blending solid information with great comedy (Fritz, 2016; Plait, 2016). Likewise, writing for *People*, McAfee (2016) approves of how Kimmel used comic flair when he launched a seven-minute “attack” on climate change denial and the lack of expertise of “noted non-scientist, failed vice presidential candidate, and half-term Alaska governor Palin” without sacrificing laughter. Kimmel’s segment regularly becomes part of the roundup of the funniest comedy of the week.

Authors from entertainment sites also express various degrees of shock about Kimmel’s newfound climate activism. Kimmel, some admit, is a beleaguered talk-show host and comedian who has been forced to step off his comic stage and on to an activist one because of Palin’s recent climate change denial. Writing for *The Daily Beast*, Wilestein (2016) thanks Kimmel for using his platform and “dedicating an extended portion of his

late-night show to addressing Palin's latest crusade" and then firing back "with a video in which real climate scientists explain exactly what makes the film and its message so destructive" (Wilstein, 2016). In the same vein, Galucci (2016) from *Mashable* aligns Kimmel's work on *Scientists on Climate Change* with that of other celebrities whose passion for environmental causes, such as Leonardo DiCaprio, forces them to take risky stands.

In the first week of its release, Kimmel's full parody PSA directed at Donald Trump circulates much less around the internet than his other video. This lack of interest may be connected to another *Jimmy Kimmel Live!* episode that aired the same week. What drew substantially more online buzz was a controversial interview in which Kimmel interrogated and interrupted a confused Kanye West.¹²

5.5.3 Activist Websites

The videos of Oliver and Kimmel are also referenced and praised on activist websites and personal blogs to draw attention to the ongoing climate change crisis. Oliver's representative debate is highlighted by The Sanders Institute, whose mission is to "revitalize democracy by actively engaging individuals, organizations and the media in the pursuit of progressive solutions to economic, environmental, racial and social justice issues"; and CO2 Earth, a bare bones website (launched in Nov. 2013 in anticipation of the

¹² In this interview August 10, 2018, Kimmel inquired about Kanye's relationship with President Trump, leaving the rap star speechless. This was the exact comment that drew silence from West: "There are families being torn apart at the border of this country. ... Whether we like his personality or not, his actions are what matter," Jimmy Kimmel, 50, said. "You so famously, and so powerfully said, 'George Bush doesn't care about black people.' What makes you think that Donald Trump does — or any people at all?"

Paris Summit) that provides updates on rising CO2 levels. A story on Oliver's *Paris Agreement* monologue likewise appears in the Environment section of Global Citizen, whose primary mission is eradicating extreme global poverty by 2030. Although McCarthy (2017) calls Oliver's monologue a rant, she summarizes its seven lessons before extolling its "bracing, hilarious, and informative" message, which explains "the agreement, skewers the rationale for leaving it, and gives a good description of the threat of climate change."

Both of Kimmel's videos circulate on a range of activist websites, mostly to assert the scientific consensus, to criticize the lack of climate change coverage in the commercial media, and to analyze American climate change skepticism. After treating Kimmel as a concerned citizen who has been forced to become a climate activist, the respected watchdog site Media Matters contrasts Kimmel's dedication to climate change with that of the comedian's own network. Pointing out ABC's deficient coverage, the article targets *World News Tonight*, "which did not feature a single scientist in its 2015 coverage of climate change." Similarly, "ABC's Sunday news show, *This Week*, included only one, who was quoted but did not appear" (mediamatters.org). Similarly, Herzog (2018), writing for *The Stranger*, rapidly transitions from mentioning Kimmel's parody PSA to critiquing ABC, NBC, CBS, and Fox who "had a combined total of 50 minutes of climate change coverage in 2016. That's less than the Jolie-Pitt breakup. The world is burning, and we're over here freaking out about celebrity divorce." For this author, Kimmel is one of the main figures behind the recent mini-surge in accurate climate change coverage in 2018, which has been motivated by a desire to replace President Trump's administration with leaders "who are willing to help up save ourselves." Herzog also applauds Kimmel for being a political commentator who used language that will persuade the president. *Grist*, a Seattle-

based online publication dedicated to all climate change related subjects (Teirstein, 2018), also claims Kimmel as a climate change activist “in our corner” who “took the Trump administration to task.” In other words, Kimmel’s brave and necessary segment symbolizes the gap in media coverage of climate change that must be addressed by those outside of the deficient commercial press, such as celebrity climate activists.

5.5.4 Blogs

On blogs, Oliver’s *CC Debate* draws more buzz than the other three videos. Ken Burridge (2014) and K. Whitmire (2014) address Oliver’s debate video not only to elaborate on the flaw of false balance but also to extend the significance of his satirical message. In his personal environmentalist blog, Burridge segues from Oliver’s subject matter to a long, respectful post on the roots, persistence, and similarity of American and Australian climate change skepticism, which he ties to media conglomerates and corporate shareholders. Similarly, for K. Whitmire’s opinion blog on Alabam.com, Oliver’s debate becomes an opportunity to discuss the media’s irresponsible climate change coverage and the startling combination of American ennui and the denial of expertise. He segues from these problems to the prevalent apathy in Alabama that is preventing citizens and politicians from contending with pressing issues, such as climate change, entitlement reform, and underfunded pensions. His discussion of Oliver’s segment permits him to take a stand on both the deficiencies of the commercial media and the pressing problems in his state while getting people talking: his corresponding live chat hosted a 500-comment-thread. In this thread, there is a lively discussion about whether climate change is human-

caused, Alabama's several climate-change denying politicians, and the lack of environmental education in the state's schools.

One of the oddest references to Oliver's *CC Debate* comes from the corporate blog (2014) of Suncor's Oil Sands Question and Response (OSQAR) website, which used the video to announce the company's newer, greener direction. Suncor, the oldest and dirtiest mining company in the Alberta Tar Sands, is notorious for its toxic tailings ponds. Nonetheless, the company, which has promised to clean up its operations (eventually), has been trying to rebrand itself as an environmental steward by addressing the issue of climate change and investing in sustainable power initiatives. One of its efforts is this blog, which supports "constructive dialogue about the oil sands." The blog merely introduces Oliver's video with a summary but no commentary: "In this must-see segment from his latest fake news show, *Last Week Tonight*, Oliver looks at mainstream U.S. media's coverage of climate change and their penchant for giving equal airtime to climate science deniers." Although there is no commentary, this blog entry marks a subtle kind of virtue signaling (Bartholomew, 2015): communicating to indicate that Suncor is virtuous without riskily acting to prove this moral quality. In this unauthored entry in which it raises the subject of climate change, Suncor attempts to distance itself from other oil companies. The nod to Oliver is supposed to indicate that the company is now on the right side of the crisis; it also deflects attention from its own dirty mining operations and complicity in perpetuating climate change.

5.5.5 Accepting Comedians as Climate Change Communicators and Agenda-Setters

In short, my searches pulled up mostly positive coverage of Oliver's and Kimmel's satirical climate change comedy. Centrist and left of center media appreciate Oliver's and Kimmel's accurate and clear climate-change messaging. The most approving coverage is from these news and magazine sources: *USA Today*, *The Washington Post*, *The Huffington Post*, *The Guardian* (2x), *The Atlantic*, *New Statesman*, *Business Insider* (2x), *Vox*, *ThinkProgress*, *The Atlantic*, *Time*, *Slate*, and *NPR*. Often, these media outlets reference Oliver and Kimmel to establish their own commitment to climate change coverage and to reassert that climate change is important to the public agenda.

Agenda-setting theory, developed by McCombs and Shaw (1972), affirms that the news media shapes the public agenda. That is, the media distorts reality by filtering and reshaping stories, such as prioritizing them, repeating them, and so on; through its coverage, the media does not tell us *what to think*, but what *we should think about* (McCombs & Shaw, 1972). Chapter Two of this dissertation indicted the commercial media and far-right news outlets for failing to prioritize and accurately cover the serious problem of climate change and the associated scientific consensus. By its preoccupation with the Benghazi scandal, for instance, the Fox News Channel signaled that Hilary Clinton's emails were more troubling than other pressing issues; by ignoring climate-related stories or downplaying extreme weather events, the network also indicated that the climate was not in crisis. In contrast, by spending twenty minutes on a nuanced explanation of the Paris Agreement, Oliver informs his audiences that the accord, which should be on the public's mind, is central to mitigating climate change. By correcting climate change

fabrications and by compensating for the commercial media's minimal coverage of climate change, Oliver almost forces their hand. When media outlets mention the climate change messaging of Oliver and Kimmel, their actions might be seen as saving face. Or to put it another way, referencing these examples of satirical comedy is a convenient way of indicating their serious concern about the climate crisis and the need to keep it at the top of the public's itinerary. Media outlets steal back, in a minor way, their agenda-setting functions from Oliver and Kimmel.

Nonetheless, centrist to left-of-center sources either appreciate the discursive integration of satirical climate change comedy or do not assess Oliver and Kimmel as comedians who lacked the credentials to discuss climate change. Oliver's videos, in particular, are treated less as comedy and more as journalism and climate change communication. Several positive stories praise Oliver's wit, fact-checking, and precise targeting of scientific mistruths, but only four of the sources in my sample refer to him as a comedian. Most stories downplay his comedy and satiric methods to comment on his accurate messaging and tough arguments. They focus on how Oliver dismantles false balance, critiques irresponsible journalism, enforces consensus, explains the carbon budget, and so on; he is respected as a journalist, commentator, and/or science communicator. In his *Paris Agreement* segment, for instance, Oliver is lauded for fact-checking Trump's speech and explaining the accord's importance (Tesema, 2017).

Though Kimmel's climate change communication was also praised, he is usually considered a comedian, talk-show host, or late-night entertainer, but one appreciated for taking surprising, but informative stands. Even the rather staid centrist publication *The Hill*, which usually objectively reports on all things Washington, notes that Kimmel's "video

comes amid continued warnings from scientists about the dangers that climate change could pose for populations around the world.” The comedian succinctly addresses how President Trump has continued “to roll back policies that were implemented to combat the planet’s warming” (Wise, 2018). Several writers also commend Kimmel’s *Hey Donald Trump*, the coarsest of all the satirical climate change comedy videos for “dumbing down climate change” and speaking in a language that even President Trump may understand (Clark, 2018; Mazza, 2018; McLuskey, 2018).

These are just a few examples, but many writers who approve of Oliver’s and Kimmel’s attempts to correct climate change misrepresentations and disinformation did not regard these hosts as only comedians or elite celebrity activists, but important public figures. Oliver and Kimmel are artfully using their comedy and television forums to persuade audiences of the climate crisis and to put this issue at the top of the public agenda.

5.6 Rejecting Satirical Comedy about Climate Change

In contrast, conservative sources are far more critical of these hosts’ combination of comedy and climate activism. The most negative coverage of Oliver’s and Kimmel’s videos is derived from sources that disapprove of celebrity agenda-setters and/or the combination of climate change and comedy: articles from *The Dallas News*, *Forbes*, *Watt’s Up with That?*, *Real Clear Politics* (Schwartz, 2014), and the National Center for Public Policy Research. For instance, Jeff Mosier (2016), energy and environment writer for the right of center newspaper *Dallas News*, criticizes Kimmel’s segment so he could reject comedic climate change communication and publicize *Climate Hustle*. First, he disparages Kimmel for taking on climate change “in the most late-night, talk-show way possible:

ridiculing Sarah Palin and using rants by a profane child and cussing climate scientists.” After articulating the context of Kimmel’s clip—*Climate Hustle* and its main argument—Mosier reports the film’s screening dates and its positive reviews by conservative media. In its own propaganda feedback loop, the story includes links to *Climate Hustle*, *Breitbart*, *ClimateDepot.com*, and a long *New York Times* story about Marc Morano. Although this short article makes a few nods to journalistic objectivity, it mainly advertises *Climate Hustle*, even including a trailer at the end.

The most resistant article from a major publication is an opinion piece written by Kyle Smith (2014) from the right-leaning magazine/website *Forbes*. Smith mentions Oliver’s monologue to take stands on celebrity activists whose climate change alarmism is distorting the public agenda. He first condemns the recent trend of “how know-nothings in the media, entertainment and politics are reaching for ever more questionable arguments as they continue to fail to stoke fears in an American public that, contrary to their hateful claims, largely believes in global warming but isn’t particularly worried about it.” He finally lands on Oliver, one of the most popular know-nothings, who “relies on the audience to mistake him for a well-informed person . . . whose Cambridge degree and British accent equal erudition to low-information viewers.” He also references Oliver’s segment to iterate a milder version of the “global warming is a hoax” argument. His *CC Debate* segment, when coupled with recent announcements from Governor Gerry Brown and John Kerry, demonstrates how liberal alarmists are guilty of using scare tactics as well as misrepresenting the 97% of scientists consensus. To further make his case, he mockingly alludes to several fear-inducing articles from *The New York Times*, *ThinkProgress*, *The Atlantic*, NBC, and so on. He contrasts these with what he depicts as commonsense climate

change information: a *Forbes* article (from James Taylor of the Spark of Freedom), a story from climate central, and a blog from *The Economist*. Smith also minimizes the effects of climate change, linking to articles on cold weather, reduced storms, and fewer hurricanes, all published by *Forbes*. Thus, his critique of Oliver allows him to confirm *Forbes*' commonsense and accurate stance on climate change (if not climate skepticism) and the liberal media's dangerous, alarmist rhetoric that is distorting the public agenda.

In the search, only three far-right sources address Oliver's *CC Debate*, mainly in an effort to reset the agenda by debunking climate change fears and exposing the dubious credentials of celebrity activists. One of these entries is from Watt's Up With That (WUWT), a website/climate change denial blog written by Anthony Watts, former meteorologist, notorious-climate change denier, and a Senior Fellow at the Heartland Institute. Watts is known for his argument that the scientific community has failed to report truthfully on climate change. In his blog, Watts pans Oliver's segment for its alarmist arguments and for the host's insulting treatment of climate skeptics. Perhaps because of the popularity of Watt's website in the far-right media ecosphere, and his familiar claim that climate change is a hoax, he simply reaffirms, rather than proves, that Oliver's argument is weak. The second is an opinion piece from Amy Ridenour (2014), president of the National Center for Policy Research. She opens her article by wondering, "what sane person would get his science news from *This Week Tonight* with John Oliver?" She derides celebrities like Oliver and Nye for not having the credentials to understand, let alone discuss climate change, for misconstruing the argument about its causes, and for irresponsibly disinforming the public. Ridenour, who has referred to global warming as a

religion (2009) and who supports free market solutions to climate change, passes judgment on Oliver to reassert her position on the right side of the climate change debate.

For Jimmy Kimmel, the most hostile coverage is written by self-proclaimed investigative journalist, climate change denier, and former fan James Delingpole (2016). He addresses Kimmel's satire for these main purposes: deriding political comedy and debunking the scientific consensus. After admitting that "Jimmy Kimmel is great. Probably the most relaxed, amiable, and funny of all the U.S. talk show hosts, not counting James Corden," Delingpole abruptly announces that Kimmel just lost a fan for airing *Scientists on Climate Change*, because he not only made the mistake of blending politics with comedy, but also revealed his liberal views. Accusing Kimmel of abusing "his privileged late night ABC time slot to tell millions of people about the 'science' of climate change," Delingpole denounces celebrities who exploit their power to make erroneous political statements on unsettled issues. In particular, Kimmel is guilty of not getting his facts straight, of depicting climate change skeptics as "wing nuts" whose negative feedback will be a "badge of honour" to him, and of supporting the since debunked 97% consensus.

One outlying critical source, however, is derived not from a conservative climate change skeptic, but from marine biology professor and science writer/filmmaker Randy Olson. In his blog entry published on May 5, 2016, Olson marks boundaries between climate change communication and comedy while also addressing Kimmel's unintentional promotion of climate change denial. First, Olson disparages Kimmel for mentioning, legitimizing, and ultimately publicizing *Climate Hustle*. By warning his audience, which has a high proportion of conservatives, and by uploading this segment to his YouTube channel, Kimmel irresponsibly popularized a minor film that might have otherwise been

ignored. Using IMBD's Hollywood scorecard for *Climate Hustle*, Olson hypothesizes that the following week, the film will be more popular because it achieved its "highest profile media hit as the subject of a 7 minute rant" on *Jimmy Kimmel Live!*. He notes that "[w]hile some people inside the bubble of the climate community thought it [Kimmel's video] was 'devastating,' I would suggest it was more of a major coup for Morano to receive such high profile attention. And for free." He compares Kimmel's treatment of Morano to the media's negative pre-election coverage of Trump, which gave the then weak candidate significant free exposure and bolstered his ratings. Olson recognizes that Kimmel may feel obligated to address social issues, but accuses him of being an incompetent climate change communicator because of his dubious credentials and simplistic messaging. According to him (2016), Kimmel "is not the person who can actually damage the climate skeptic crowd. He has no real gravitas, and more importantly, all he did was create an equally silly scene of humble scientists using profanity."

5.7 Satirical Climate Change Comedy's Edge

In short, the satirical comedy of Oliver and Kimmel assails, drawing attention, negative, positive, and mixed to the problem of climate change and to the authenticity and credibility of celebrity science communicators. With one exception (Olson above), centrist and left-of-center sources and voices recognize how Oliver's and Kimmel's particular combinations of comedy, satire, and information make public affairs issues palatable; these hosts are praised for publicizing the existential crisis of climate change.

However, not everyone appreciates the powerful discursive integration of satirical climate change comedy. Negative assessments of Oliver and Kimmel stress that politics

and comedy do not and should not mix, with writers often deeply suspicious of these hosts' climate change messaging. Conservative writers regularly use the terms *comedy*, *comedian*, and *celebrities* not as neutral descriptors, but as pejoratives to reject Oliver's and Kimmel's examples of climate change satire. Comedians should know their place.

These polarized reactions nonetheless align with satire's negative aggregative function: its creation of insiders, who are on the right side of the joke; and outsiders, who are on the wrong side. In this case, the outsiders are those right and right-of-center voices who resent being mocked for what they see as their "commonsense" climate change views. The next chapter will examine if these and other negative attitudes about celebrities and satirical climate change comedy also persist on the YouTube comment boards.

6 Reception of Oliver's and Kimmel's Videos on the YouTube Comment Boards

This chapter, the longest one in my dissertation, analyzes YouTube comments to consider the reception of Oliver's and Kimmel's satirical climate change comedy. Whereas section 6.1 presents the research question and a summative answer, 6.2 provides an overview of the findings of the probability sampling: the most dominant themes on both comment boards. This section reveals that although the majority of sentiment for all four videos is positive, Jimmy Kimmel provokes more negative commentary on his polarized *Scientists on Climate Change* board. This section also examines the most upvoted comments, conversation density, and longest conversations, drawing its evidence from the purposive sampling of all four segments of satirical climate change comedy. 6.3 investigates those on the board who use these satirical comedy videos to discuss the contexts and conditions of American climate change denial, to offer personal experiences of climate change, and to act as citizen science communicators.

The resistance to both hosts' climate change messages are addressed in sections 6.4 to 6.6. Whereas 6.4 considers those who reject celebrity climate activists and who promote pervasive climate change myths, 6.5 examines frequent and repeated commenters who try to control the comment boards and react against changes in the climate change narrative. After addressing the forces of old and new conspiracism present on the YouTube comment boards (6.6), the chapter concludes, in 6.7, by exploring how feedback from the most resistant commenters may provide insight into more effective strategies for climate change communication.

6.1 Research Question

This chapter addresses this guiding research question:

- *RQ2B: What do online comments on selected satirical climate change videos reveal about how and why audiences support and resist these satirical texts along with how they interpret and enter into conversations about climate change representations?*

The YouTube comment boards demonstrate that satirical climate change comedy is a powerful tool for gathering people to discuss climate change, for better or for worse. On all four boards (but to a lesser extent on Kimmel's *Scientists on Climate Change*), the majority of comments express positive sentiment for Oliver's and Kimmel's examples of satirical climate change comedy, with users embracing the hosts as celebrity science communicators. Many who approve of their satire accept the urgency of the climate crisis and the necessity for celebrities to intervene. Others agree with the comedians' messaging because it provides commenters with an opportunity to narrate their own experiences with climate change as well as discuss the context of American climate change denial. The videos' contents also act as entry points to consider other pressing issues in America, such as the decline of the Republican Party. Still others follow the comedians' leads by taking on the roles of citizen science communicators themselves, debunking common climate change myths and attempting to restore faith in scientific expertise.

In contrast, the negative comments, which are often longer and more vitriolic, reveal significant resistance to celebrity science communicators and their enforcement of consensus. The YouTube comment boards for these four videos also disclose the longstanding effects of disinformation campaigns on generating climate skepticism and of

framing climate change in terms of untenable conflicts. Oliver's and Kimmel's satirical climate change comedy also motivates a significant cadre of climate-change deniers, who make repeated comments on the board, stirring up doubt.

Satirical climate change comedy, perhaps like other YouTube videos, also draws attention from those who ignore or at least do not reaffirm climate change in order to make humorous, if not ridiculous statements. On the samples for all four boards, a substantial amount of feedback consists of nonsense and noise: silly remarks, disconnected statements, and ad-hominem attacks. People insult and troll each other, often paying little to no attention to the videos' contents. Others use the YouTube board to try their hand at comedy, such as extending Oliver's and Kimmel's jokes, often with particularly unfunny effects.

6.2 Overview of the Comment Boards

The first answer to this question emerges from an overview of the comment boards. The probability samples reveal that, overall, more comments express positive reactions and/or approval with both Oliver's and Kimmel's satirical climate change comedy than negative reactions or disagreement. (More information is located in Table 3.)

There are two anomalies, however. For Oliver's *Paris Agreement* video, a sizeable portion of commenters agree with Oliver's satirical climate change comedy not because of how it debunks mis and disinformation associated with the Paris Agreement, but because of its representation of President Trump. That is, most approving remarks do not stem from agreement with the importance of the Paris Agreement but from commenters' united concern, fears, and dislike of the president.

Kimmel’s *Scientists on Climate Change*, his first foray into climate change messaging, also has the most polarized feedback. (I have highlighted this polarization in the blue shaded cells.) This discrepancy might be due to Kimmel being a newer and riskier voice in the climate change conversation. His more conservative fan base—those who subscribe to his YouTube channel or stumbled upon this video because of an appreciation for the comedian—might not appreciate his tackling of the politicized topic of climate change as well as criticizing the most prominent skeptics: the GOP and the president.

Table 3: Comparison of Positive and Negative Feedback for all Four Videos

	<i>CC Debate</i>	<i>Paris Agreement</i>	<i>Scientists on Climate Change</i>	<i>Hey Donald Trump -- Climate Change Affects You Too</i>
MIXED	1.4%	4%	3.7%	3.5%
POSITIVE COMMENTS	37%	44.2%	33%	35.5%
NEGATIVE COMMENTS	26.5%	22.4%	31.5%	25.6%
OFF TOPIC COMMENTS	35.1%	29.2%	31.5%	35.2%

6.2.1 Shared Themes

The shared themes for all comment boards are compiled in Table 4, but Section 10.2, in Appendix B, contains the complete breakdown of the major themes for all four videos. In the table below, the numerical percentages indicate the proportion of comments in the entire random probability sample that contain this theme. The number in brackets indicates the overall rank of this comment in the positive and negative themes, respectively.

Table 4: Weighting of Shared Themes in the Four Videos

Theme	<i>CC Debate</i>	<i>Paris Agreement</i>	<i>Scientists on Climate Change</i>	<i>Hey Donald Trump -- Climate Change Affects You Too</i>
POSITIVE THEMES				
Asserting the scientific consensus on climate change	10.9% (1 st)	n/a	7.2% (3 rd)	n/a
Stressing the reality and seriousness of climate change	8.1% (3 rd)	4.6% (4 th)	10.1% (1 st)	7.0% (3 rd)
Praising Oliver and Kimmel for taking up the cause of climate change	7.2% (4 th)	4.6% (5 th)	5.8% (4 th)	13.7% (2 nd)
Blaming Republicans and/or President Trump for CC denial	10.7% (2 nd)	5.3% (3 rd)	8.1% (2 nd)	14.8% (1 st)
NEGATIVE THEMES				
Rejecting global warming because it is a hoax or a conspiracy	8.6% (1 st)	2.0% (4 th)	9.6% (1 st)	7.0% (2 nd)
Arguing that climate change is natural and/or cyclical	5.3% (2 nd)	3.7% (3 rd)	6.1% (2 nd)	3.9% (3 rd)
Debunking the scientific consensus on climate change and/or the legitimacy of climate science	2.8% (4 th)	1.3% (6 th)	4.9% (3 rd)	n/a
Rejecting the climate change communication efforts of Oliver and Kimmel	2.8% (4 th)	5.6% (2 nd)	4.0% (4 th)	11.2% (1 st)

In general, those making positive comments recognize that climate change is a serious problem, assert the scientific consensus, and praise Oliver and Kimmel for

responsibly using their celebrity power and comedy in their persuasive climate change messages. There are some differences, however. Because Oliver and Kimmel assert the scientific consensus directly in *CC Debate* and *Scientists on Climate Change*, only their boards contain significant remarks echoing this consensus and the importance of heeding scientific experts. Furthermore, the board for Oliver's *Paris Agreement* segment behaves a little differently: the top theme, which accounts for 20% of the total positive comments, concerns President Trump. That is, a large contingent of commenters agree with Oliver's lengthy message because they support the comedian's critique of the president. The second largest theme on this board is agreement on the importance of the Paris accord and America's participation in it.

In spite of the overall positive reception of both videos, there is still significant resistance to both hosts' satirical climate change comedy, which is discussed in greater detail in subsequent sections. The negative comments follow three main trends. The first is the repetition of persistent climate change myths: global warming is a hoax, climate change is cyclical and/or natural, and climate science and the scientific consensus on climate change are illegitimate. Those who disapprove of Kimmel's and Oliver's satirical climate change comedy also express significant distrust of celebrity climate activists, questioning their honesty and expertise. Both hosts are also subjected to ad-hominem attacks for speaking out against climate change denial.

6.2.2 Positive Comments: Approving of Climate Change Messaging

There are several approbatory comments, but I want to focus on two dominant themes here, which were also apparent in my survey of the online circulation of these

videos from Chapter 5: respecting comic celebrities as climate change communicators and agreeing with the comedians' evaluations of the Republican Party and Donald Trump. Those on all boards recognize that because of various forms of mis and disinformation circulating about the climate change crisis, celebrities are important figures for commenting on journalistic flaws and for correcting fabrications. For Oliver's satirical monologues, there are several laudatory posts consisting of the simple signs of social media praise: "thank-yous," thumbs ups, and brief comments (comedy gold, cracked me up, love it, and so on). There are also longer statements, such as this accolade for Oliver's detailed explanation of the Paris Agreement. "THANK YOU John Oliver!! You give me hope that there are people out there fighting for an informed and rational society" (helios). Comments expressing enthusiastic approval of Oliver's satirical monologues are from old or newfound fans who praise the comedian's responsible use of his celebrity status and television forum to affirm the scientific consensus and the importance of the Paris Agreement.

Kimmel is also recognized for his inventive, effective climate change messaging, but praise for him, perhaps because he is recognized more as a comedian than a political commentator, is far more effusive. Many viewers, who are both surprised and delighted by Kimmel's surprisingly strong stand in his *Scientists on Climate Change* segment, suggest the impact of his satirical climate change comedy in informing viewers. Commenters express appreciation for what they see as Kimmel's important public service: using a few minutes of his program to tackle climate change denial. Kimmel's message also garners him new fans who appreciate his more serious turn: "I was pretty lukewarm on Jimmy Kimmel; until this. Now, lots of respect - and laughter" (Mark Carbone). Others who want Kimmel to continue his activist evolution suggest additional segments on climate change

to compensate for the media's lack of coverage. Titi Dequeker implores, "Can you please advocate for more to be done about our environment, as a teen I'm terrified to see what the world is like in 30-50 years, so much will be changed, you have a big reach Jimmy!" A few people ironically recognize that Kimmel is doing a better job than his own network at communicating climate science (blue cheddar).

Accompanying this approval of Kimmel's climate change messaging is significant debate over his seemingly recent political turn and his supposed authenticity. Several commenters attribute Kimmel's new demeanor and edgier comedy to the recent crisis with his son, which made the comedian more judgmental about the Republican Party and its policies. A mature man, a concerned father, and a terrified American are all used to describe Kimmel's transformation. Unfortunately, Kimmel's political change of heart also polarizes viewers on the board; those who embrace him for speaking up to injustice and bad leadership are often answered by others who reject him for selling out to leftist Hollywood causes, such as climate change.

On all four comment boards, one of the common themes consists of users approving of these comedians' satirical climate change segments because they responsibly address the role of Republicans in climate change denial: *CC Debate*, 10.7%; *Paris Agreement*, 5.3%; *Scientists on Climate Change*, 8.1%; *Hey Donald Trump*, 14.8%. There is, however, both overwhelming anti-Republican (5.3% of comments) and anti-Trump sentiment (20.1%) on Oliver's *Paris Agreement* board. That is, 1/5 of the comments in the probability sample are direct (and often lengthy) critiques of the current president's leadership and decision-making. The weight of this theme here reveals satire's slipperiness: the problem of audiences missing major targets to focus on minor ones. That is, Oliver

spends the majority of his monologue critiquing the misrepresentation of the Paris Agreement. He targets various fabrications before correcting them: he explains carbon credits, the finer details of the accord, and the reasons the U.S. and the world must support it. However, very few comments make direct assertions about the Paris Agreement's importance. (Only one person in the sample explains how the accord may seem unfair because it asks the richest countries, the biggest emitters of GHGs, to drastically reduce their CO₂ output whereas developing nations have looser standards). Instead, commenters downplay Oliver's assaults on disinformation to focus on his direct attacks on President Trump, a sub-topic comprising only a mere three-plus-minutes of his speech.

Perhaps because many commenters already understand and agree with the Paris Agreement, Oliver's satire about the president's rejection of the accord provides them with an excuse to discuss the president's errant leadership and what they regard as the disintegration of American politics. On the topic of President Trump, Margo Romero accuses him of being a "despicable human being and a completely incompetent 'leader.'" His term in office will go down in history as the Single Biggest Set Back in American History." To ascertain that this percentage of comments discussing President Trump wasn't solely an anomaly of the probability sample, I searched for references to the president on the entire *Paris Agreement* comment board. I discovered that many use their feedback on the YouTube board as an opportunity to discuss what they believe are the president's main faults: his ignorance, narcissism, mental decline, irresponsible decisions, lack of scientific knowledge, and vengeance against President Obama.

Similarly, Kimmel's boards also contain significant sentiment blaming the public confusion about climate change and the lack of climate change policy on President Trump's

questionable leadership and his irresponsible spread of disinformation. Commenters also suggest that the president may understand the threat of climate change but is stalling climate policies to appease the fossil fuel industry and his voter base. For instance, in his response to *Hey Donald Trump*, one commenter, John Somers, decides to take on the role of investigative journalist and expose President Trump's genuine understanding of the effects of climate change. Somers acknowledges that the leader has secretly acknowledged climate change's threat: "He's been granted planning permission for a wall to be built around part of his golf course in Doonbeg, Ireland to protect it from coastal erosion. . . . So he does know that Climate Change is real but chooses to pretend differently and ignore it to play up to the idiots that form his base." Somers, who also links to other sources to substantiate his claims, attempts to persuade the president's supporters that he is a hypocrite. (According to Macguill (2018), the president may or may not have known about the planning application submitted to County Clare, Ireland. The report for the president's company, Trump International Golf Links (TIGL), was written by an Irish firm.)

In other words, both comedians are praised for using their television forums in responsible ways and for doing what the Republicans have failed to do: put climate change at the top of the public agenda.

6.2.3 Approval in the Upvoted Comments

Along with the dominant themes, the most upvoted comments on all four boards (those receiving the most likes) are also slanted towards acknowledging the climate change problem and expressing positive sentiment for the climate change messaging of both Oliver and Kimmel. For instance, for Oliver's *CC Debate*, the three main types of upvoted

comments are repetitions of or extensions of Oliver's jokes (which may or may not be funny), enthusiastic praise for Nye and Oliver, and sarcastic and/or cynical comments on the phenomenon of American climate change denial. There are, however, a few highly upvoted comments taking more serious perspectives on the climate change crisis, which are discussed in section 6.3. (Please refer to Tables 8-11 in Appendix B for complete breakdowns of the likes and replies for the most upvoted comments.) Similarly, the top upvoted comments on the *Paris Agreement* board all support, in some way, Oliver's overall argument or claims about the accord. The uniformity, or perhaps a solidarity, in the top comments, is even considered a blessing: "Seeing the top comments gives me a little hope. . . Maybe not all of america is completely retarded" (simz, 157 likes, 10 replies). Similarly, for Kimmel's *Scientists on Climate Change* monologue, the majority of upvoted comments also express a positive stance towards Kimmel's satirical discourse and significant anti-Republican sentiment. Despite his more mainstream program, Kimmel's video attracts far more direct criticism of Republicans and more positive feedback of these criticisms. Eight of the twenty most upvoted comments, in fact, express significant anti-conservative sentiment, which is directed at Sarah Palin, far-right climate change deniers, and the entire Republican party. For Kimmel's *Hey Donald Trump*, seven of the top ten upvoted remarks are direct criticisms of the president: commenters express dismay and anger at what they see as the president's narcissism, refusal to accept reality, and blatant lying. Auriam notes, "Of course the global warming has accelerated since Trump became president. The amount of bullshit spewing out of his mouth is releasing quite a bit of methane" (474 likes). A few upvoted comments consist of flippant remarks or Oliver-and

Kimmel-inspired witticisms, which are contributed by users who appear to treat the segments only as entertaining popular culture and not as persuasive arguments.

6.2.4 Analyzing Reply Density: Climate Change Causes Conversations

The probability sample and most upvoted comments tell one story of the YouTube comment board whereas the reply density tells another. Thelwall (2012) defines reply density as the proportion of the total number of comments that are included in conversations. In his 2012 baseline study of over 4000 videos with over 999+ comments, Thelwall discovered that videos concerning controversial topics about religion, science, and technology tend to have a reply density of around 25%. All four of the videos in my case study have far higher reply densities than what Thelwall has defined as typical for YouTube videos on contentious subjects. The table below contains more information on the tabulation of the reply densities.

Table 5: Reply Densities for the Four Videos

Video	Total Comments	Total Number of Comments that are Replies	Reply Density
<i>Climate Change Debate</i>	8861	6198	70%
<i>Paris Agreement</i>	14,357	4941	35%
<i>Scientists & Climate Change</i>	5,076	3597	71%
<i>Hey Donald Trump -- Climate Change Affects You Too Affects You Too</i>	815	379	53%

As is clear from the chart above, for Oliver's *CC Debate* and Kimmel's *Scientists on Climate Change*, there are significantly more people replying to comments and

engaging in conversations than there are those contributing original content through parent-level comments. For Oliver's *CC Debate*, the high conversation density is due to a small number of catalytic comments that instigate lengthy conversations continuing for weeks, months, and even years. For instance, the top-ten most replied to comments account for 1,477 total replies; the next five comments have a total of 458 replies. Oliver's strong stand for scientific consensus inspires significant and diverse discussions in the longest conversations: some critique American climate change denial, some offer confused outsider remarks on climate change skepticism, some discuss personal experiences with climate change and climate change denial. However, Oliver's harsh criticism of media's false balance, his opinion of the wrongheadedness of the American population, and his assertion of scientific consensus also create significant polarization. The two longest conversations, which are discussed in subsequent sections and consist of 239 and 229 replies, are led by two trolls on opposite sides of the climate change question: virulent but eloquent climate-change denier Equis Narnd and expletive-prone climate-change affirmer Experience Counts. This trend is in keeping with Thelwall's finding that on the YouTube board, positive comments about popular culture tend to be blander and shorter whereas negative remarks are often lengthy, personal, and vitriolic. (Tables 12-15 in Appendix B contain complete breakdowns of the comments that motivated the most replies and longest conversations.)

Kimmel's stance in his *Scientists on Climate Change* segment also leads to significant reply density, but his YouTube board consists of several shorter conversations. Rather than polarization in the longest discussions, the majority of these conversations affirm that climate change is happening and that Republicans are irresponsibly ignoring

the climate crisis. Perhaps because of Kimmel's milder stand, which doesn't directly target the current Republican Party or the irresponsible media, there are no long discussions dominated by trolls or by intense two-person verbal brawls. Instead, several of these discussions extend Kimmel's arguments by further criticizing Republicans, climate-change myths, and the ignorance of Americans and political elites. In short, Oliver's harder-hitting attacks on those who deny that climate change is happening and those who refute the scientific consensus provoke more militant climate-change denying trolls who dominate the board.

6.3 A Deeper Dive: Concerned Citizens and Citizen Climate Change Communicators

This section takes a closer look at selected dominant themes, popular comments, and long conversations from all four boards in order to examine how, through interacting with the content of the videos and others on the YouTube comment board, people tackle the problem of climate change denial. Many also use the videos as entry points to discuss the peculiar context and conditions of American climate change denial. They also appropriate YouTube's virtual public sphere to offer persuasive personal narratives about climate change and act as impromptu science communicators debunking mis and disinformation.

6.3.1 Discussing the Contexts and Conditions of American Climate Change Denial

On all four boards, people extend Oliver's and Kimmel's arguments to transform the YouTube comment board into a virtual public sphere for discussing the anomaly of American climate change denial. Weighing in on Oliver's *CC Debate* from outside the

United States, for instance, Rainbow Yak (12th most liked comment) reminds everyone that Americans are doubly ignorant: they “are not aware of the fact that the US is literally the only country in the world where people still ‘doubt’ climate change. Everywhere else, people know it’s a fact.” After reminding everyone that the Vatican did not officially declare a heliocentric universe until 1991, Rainbow Yak continues, “In the same way you laugh about that, we laugh about all those ignorant American conspiracy theorists here in Europe. But frankly, we only laugh with one eye while the other is crying. Unfortunately, the US is not some small island state but by far the biggest per capita polluter in the world.” Similarly, Daniel Washford asks, “Why is it the USA that constantly and consistently slow humanity and its progress?” (Daniel Washford). On all four boards, people worry about the effects at laughing at both the phenomena of American climate change denial and the lack of scientific expertise of political elites. Mocking American climate change denial does not address it as a problem that extends beyond U.S. borders.

On all four boards, commenters attempt to understand American climate change denial by debating the interconnected conditions for its existence: the dangerous conflation of American ignorance and denial of expertise; and the decline of the Republican party and its political elites. Although comments expressing these themes appear frequently on all four boards, for the sake of brevity, I will focus on only a few examples.

The intelligence of Americans and the American distrust of science and expertise are deliberated on all comment boards in both humorous and serious ways. In his *CC Debate*, Oliver targeted the media’s reporting on polls stating that one quarter of Americans do not believe climate change is occurring. Oliver argues that the media should not report these polls, which inspire further doubt in those hesitant about climate change.

He also mocks the surveys themselves: “you may as well say that one quarter of Americans are wrong about something!” Several commenters extend Oliver’s joke by blatantly asserting that a more accurate figure would be three quarters or even 100 percent. Others stress that the same 25% of the American population who denies climate change also rejects evolution, believes that angels exist, and assumes that the sun revolves around the earth. A few cite a 2014 *Time* story by Grossman in which Americans thought the universe was geocentric. Many people who make these comments readily admit their place of origin, distinguishing themselves from foolish Americans, who are ill-prepared to meet the oncoming challenges of climate change. One user (anir mass), identifying as a resident of a third-world dictatorship, notes that even his illiterate grandmother recognizes the crisis of climate change, which makes her smarter than Americans, who may have better educations and opportunities but far less common sense.

On the comment boards, there is significant discussion of one supposed source of American backwardness: a deficient education system that prioritizes emotions over both critical thinking and proper instruction in science. When one commenter on the *Paris Agreement* board asks, “Why are Republicans so stupid when it comes to climate change? Don’t US schools teach Environmental education?” (John Stones, 444 likes, 56 comments), several people offer explanations. What follows are micro-debates about whether environmental science and evolution should be included in the curriculum as well as the practice of Bible belt schools avoiding controversial issues that threaten faith. The Orochi confirms that “the entire education system has been all but gutted and drained over the years.” One teacher from the South confesses that she ignores both her state’s politics and the school curriculum by teaching environmental science because she doesn’t “want those

kids to screw us over in the future” (Adriana Caverio). Non-U.S. residents enter into this conversation to register disbelief and shock about the failing American school system with several admitting that evolution and environmental sciences were staples of their education. In these exchanges, Americans on the board, whether lurking or contributing, get an outsider’s perspective on their education while learning about other alternatives.

The supposed unintelligence of both Americans and Republicans is discussed to the greatest extent on Kimmel’s *Scientists on Climate Change* comment board, with twelve of the top voted comments addressing at least one of these concerns. The third most upvoted comment is Asimov’s famous denouncement: “There is a cult of ignorance in the United States, and there always has been. The strain of anti-intellectualism has been a constant thread winding its way through our political and cultural life, nurtured by the false notion that democracy means that ‘my ignorance’ is just as good as your knowledge.” Commenters first respond to this quote by discussing what they consider the idiocy caused by the internet’s democratization of information. They eventually turn to blaming climate change denial on GOP elites, whose lack of common sense and dismal scientific knowledge will have long-term effects on America and beyond. Tea Tard comments that “[i]gnorant clowns like Palin are a threat to the planet and the security of the US.” Others suggest that political elites must have a mandatory level of scientific knowledge, so that the ignorant in charge will not destroy the planet. Commenters also extend Asimov’s argument by stating their local political representatives’ ignorant stances on climate change.

On all four boards, the videos also become entry points for commenters’ concerns about the current president; there is significant discussion of President Trump’s intellect, mental health, egomania, and leadership ability. People debate his damage to the United

States, to the country's international reputation, and to the entire world, with one person even suggesting the president may go down in history as worse than Hitler (Tea Tard). Significantly, these concerns persist across all comment boards even for those videos created long before President Trump was elected. For instance, Oliver's *CC Debate* was first uploaded in 2014, but the president's name still appears *seventy times* in the comments, many of these in cynical remarks about the further deterioration of the climate change situation under his administration. One person who thought Oliver's segment was recent is shocked to discover that it's "4 years later, and we have the same repetition of false talking points perpetuated by the right. And not only that but Trump has taken us backward on the environment" (Gurujot Singh Khalsa).

On the *Paris Agreement* board, in particular, the climate change situation and the disaster of the presidency become opportunities to analyze the faulty political system, voter apathy, and the process of impeachment. The perceptions of President Trump's unreasonable decisions, fabrications, and fascination for coal are the subjects of the second, twelfth, fourteenth, and sixteenth longest conversations whereas three of the most upvoted comments concern the president. One of these is Riley Schroeder's announcement of his rejection of President Trump and his declaration that not all Americans support the leader: "People of the world, please know that a large number of Americans, including myself, oppose Trump's idiotic decisions and do not feel at all represented by him" (1127 likes, 73 replies). This comment sparks a discussion of the need for significant electoral college reform and the social and structural problems of the last election that, according to commenters, unethically swayed the results in the Republicans' favor: long lines, polls closing early, requests for extra identification, and so on. Several people participate in this

conversation by offering short civics lessons on the (perhaps unjust) process of the president's election, the forces that may cause his second win, and the steps for impeaching him. An impassioned year-long discussion of impeachment is joined, and ultimately lead, by a lawyer who elaborates on the power of presidential directives, the role of Congress in the impeachment process, and the precise wording that the POTUS may be removed if "he's 'unable to discharge the powers and duties of his office'" (MetteC5). MetteC5 also patiently explains the role of the Supreme Court and the possibly dangerous precedent that will be set if the 25th Amendment is used on President Trump. The previous conversation also provides a window into history: at the time this question was asked, Congress was establishing a commission that would independently evaluate the president's mental and physical fitness.

Similarly, the feedback for both of Kimmel's *Scientists on Climate Change* and *Hey Donald Trump* video is characterized by anti-Republican comments, many garnering several likes and leading to lengthy discussions. Three of the top twenty comments on the *Scientists* board express disgust and/or anger at the current direction of the Republican Party and its embarrassing climate change skepticism whereas five remarks directly critique Sarah Palin's ignorance. People undertake to distinguish themselves from their fellow Republicans, lamenting what they see as the decline of the GOP. Bobbycone admits, "I'm Republican but Sarah Palin is an idiot! Global climate change is a big problem! And we are causing a lot of it" (414 likes, 127 replies). Despite the silliness of Kimmel's parodic PSA, the associated comment board hosts opportunities for topic shift; there is significant discussion of and anger about the president's perceived selfishness, hypocrisy, unintelligence, questionable mental health, obsession with coal, and advanced age.

6.3.2 Personalizing Climate Change

For all four videos, commenters from both inside and outside the United States also use their feedback to offer anecdotal evidence of their personal experiences with climate change denial or with climate change's effects. However, these narratives are both more involved and more frequent on Oliver's boards, perhaps because of the length and seriousness of his messages.

On Oliver's *CC Debate* board, it is the 2016 comment motivating the third longest conversation and the third most likes (2555) that illustrates the positive sharing of perspectives and problems on the YouTube comment board. TheAndrewj96 admits, "My whole family, and all our friends, think global warming doesn't exist. My Dad says it's just 'coffee shop speculation.' I can't believe I live in the same house with these people." In this long conversation with several connected threads, commenters confess their struggles with climate-change-denying and conspiracy-believing families and friends as well as tactics for persuading them. Caleb Bailey admits, "I feel your pain. I come from a conservative Christian family and I have had to deal with shit before. It's infuriating for sure." Although there are intermittent rejections of climate change and assertions that the commenter's parents are correct, most replies stick closely to the generational conflict in accepting climate change and the methods for and the ethics of contending with climate change denying family members and friends. And the advice is surprisingly sound, such as patiently talking to skeptics, distinguishing weather from climate, and framing climate change as a global problem.

Commenters also respond to Kimmel's and Oliver's videos by posting compelling narratives that attempt to convince skeptics that climate change is not an abstract, future

problem that only progressives notice or care about, but a present crisis affecting everyone. A few confess the exact moment they moved from rejection to acceptance of the climate change problem: one user finally acquiesced “when some people I personally know had heat stroke doing ordinary tasks, one died having coffee, two retirees gardening are still recovering and one just got out of the hospital last month after cooking and collapsed due to heat” (sixburngaming). His real world examples of the effects of extreme heat on the everyday lives of Americans assert that climate change is a serious problem that will only worsen, especially if leaders continue to ignore it. Like sixburngaming, other Americans weigh in from places experiencing drastic changes in weather patterns, drought, and so on, such as Wildfyreful from Texas, who lists the effects of climate change he has experienced before warning, “This shit is fucking terrifying, people.” He also painstakingly explains the paradox that climate change involves both droughts and inundation as well as frequent extreme weather events. Concerned YouTube commenters take the time to explain that climate change, rather than a hoax, is very real: the signs are all around us, for those who will bother to look.

The YouTube comment boards, at times, become international public forums in which non-Americans attempt to persuade Americans that climate change is a pressing global crisis that surpasses their borders. Responding to Kimmel’s longer video, Louise James scolds the United States for not pulling its weight and for framing climate change in terms of the economy versus the environment:

I’m from this mythical place called Denmark; we’re a small country and are all-in-all pretty damn insignificant on a global scale (despite our politicians believing otherwise) but we do pull our weight. I don’t care about the US making more money than us... I simply want the United States of America to pull their weight in this climate debacle. It isn’t about money - nor should it be about money. It is about

ensuring a future for our planet and the generations to come. It is a far bigger hubris to believe you, the politicians of the US, have the right to doom the world by not participating in the fight to save it.

Similarly, Zimbabwean Tesslyn Francis (*CC Debate*) offers another outsider's perspective by describing the extreme drought in her country.

While Americans argue about whether or not climate change exists, we here in Africa are already feeling the effects of it. Did you guys know that it hasn't rained properly in Zimbabwe since 2014? You cannot even begin to imagine how desperate the situation is there. Whether you believe global warming is happening or not, it won't kill you to slow your roll with your energy consumption.

In her aim of convincing insular Americans that the effects of climate change travel far beyond their borders, she inspires other declarations about climate change's effects: two Californians worry about record drought; an Australian describes stretches of over 40C days and increasing major bushfires; a Brazilian reports the aridity in the south-eastern part of his country; a Swede laments the lack of rain and water quotas; and a Canadian complains about the reduced snow and warmer winters. A resident of the tropics, who has witnessed the average daily summer temperature increase by 13C in his lifetime, challenges Americans to come live in the searing heat he must suffer through daily (tangerinebasket). Similarly, TKA Subsystem documents the horrifying and almost apocalyptic evidence of climate change in his sub-tropical city: "nearly all the bird (especially the poor sparrows. . .) have been driven to near extinction in this city . . . the air quality has dipped to carcinogenic levels, groundwater is sinking to around 1200 vertical feet in most places." Although this conversation eventually degenerates into a discussion of the possible AGW conspiracy, it keeps active from December 2016 to December 2018 as many global citizens discuss problematic American insularity and the growing evidence of the global climate change crisis.

The aforementioned comments and conversations matter because personal stories might persuade those bored by political rhetoric and by standardized climate change motifs. In an excerpt from his book *Climate: A New Story*, Charles Eisenstein (2019) suggests that many people are not motivated by numbers, such as those describing rising CO₂ levels and making long-term predictions of catastrophic events. Eisenstein argues that by framing environmental issues in terms of carbon caps and greenhouse gases, we might insulate people from the harsh truths and also allow the continuation of climate-change-causing practices. That is, industries could juggle or promise to reduce their CO₂ emissions, quantifying the climate change crisis and making it seem almost fixable. These small compromises communicate that the climate is not in crisis and consequently delay more effective immediate actions. Eisenstein (2019) emphasizes that climate change will matter, be made real, only when it is personalized—when its effects move from the abstract and the remote to the concrete and the local. These necessary changes will prohibit us from passing “responsibility to distant others.” In other words, climate change should be framed in terms of “protecting and healing local ecosystems” because caring for the planet, he contends, comes from confrontations of beauty and grief. These altercations definitely occur on the YouTube comment board. When people from around the world describe how their favorite fishing ponds dried up, how their local birds became extinct, or how their park’s icefields receded, they are acting as witnesses communicating the tragic effects of climate change firsthand. Their dramatic narratives might convince those who are hesitant about accepting the reality of climate change, whether they are contributing to or hovering on the board.

6.3.3 Acting as Citizen Climate Change Communicators

On the YouTube comment boards, people also regularly act as citizen science communicators, correcting climate change mis and disinformation. Ceccarelli (2011) has argued that those addressing manufactured scientific controversies, such as the climate change debate, must shift the focus to values and action; remind skeptics that science is based on consensus; and turn the fairness appeal on its head (p. 215). In the best perspective, the YouTube comment board motivates science communicators who patiently elucidate the scientific method, the peer-review process, temperature models, the causes and effects of climate change, and the establishment of consensus. Such is the case with those who address commenter Eric Duprey's (*Scientists on Climate Change*) gross underestimation of increasing water levels and his naïve belief that the U.S. has plenty of time to prepare for climate change. He optimistically announces that American citizens must "start retreating from the coasts a bit, but we have a LOT of time to adapt and I believe humans are up for the task. We've adapted to much worse." Many commenters reject his conclusion by stressing that sea levels are actually increasing drastically, with one Floridian affirming that the Miami coastline is receding by inches a year: "we've lost so much beach real estate they started tearing up old parking lots at the beach and pouring sand in to make up for it. . . . shits getting real" (Johnny Blaze). Others correct Duprey's incorrect assessment of climate change's effects by reminding him that not all residents of countries have the option to move inland and that there will be millions of climate refugees fleeing to unprepared nations. Mass flooding, rugbyuy remarks, will "produce some migrations that will dwarf the migrations of Latin Americans to the USA or the many people's moving to Europe." The assumption that current uninhabited spaces could become refuges is faulty

because the environment is strained almost to the breaking point and inland migration will result in loss of valuable arable farmland.

One of the more ambitious participants in this conversation (Martin Evans) takes the time to post a 778-word comment (one of the longest on the board) that, among other issues, refutes the claim that there are several potentially suitable climates for human adaptation before enumerating, with sources, all the effects of climate change on agriculture, wildfire activity, rice yields, geography, water supplies, health, arctic melt, glacier melt, ocean acidification, sea level rise, and the economy, supporting each of his claims with credible evidence. He and others confront and then debunk the misperception that the greatness and the economic stability of the United States make it safe from catastrophic climate change: “These are also countries where you get your food and other supplies from. You don’t live in a little isolated bubble. EVERYONE will suffer in the end” (Martin Evans).

Commenters on all four boards not only address and debunk common climate change mis and disinformation, but also explain the scientific process and try to restore trust in scientific expertise. Two conversations led by Deus exAstra and Angry Kittens (*Scientists on Climate Change*) reveal and try to correct the scientific illiteracy of some of those on the board. The longest conversation is motivated by his sarcastic barb: “97% of scientists. . . or Sarah Palin. Hmm, who to believe? Such a difficult decision, it really is.” This remark provokes a discussion in which commenters reveal a lack of understanding of sampling techniques, the methods of consensus research, a profound distrust of scientists, a blurry distinction between scientific fact and opinion, a conflation of scientific consensus with authoritarian bullying, and a fuzzy awareness of peer review, all of which DeusEsAstra tries to address and correct. Most importantly, he clarifies that affirming the

97% consensus “is not an invalid use of ‘argument from authority. . . . An invalid argument from authority would be when you use someone who is not a legitimate expert on the subject.” In other comments, DeusExAstra also asserts the importance of scientific and technological research on areas that many Americans take for granted, such as infrastructure, water testing, and food safety. His goals seem to be restoring respect for scientific expertise and extending Kimmel’s argument that it is hypocritical for Americans to trust scientists about some facts but not for those that make them uncomfortable.

Similarly, another prolific commentator and science communicator on Kimmel’s *Scientists on Climate Change* board, Angry Kittens, posts one of the longest and most liked parent-level comments that debunks a repeated myth on the board—the false notion of rich, unethical scientists living off their huge research grants. In correcting this misperception, AK painstakingly explains key aspects of scientific research, such as performing peer review, building upon knowledge by cross-referencing the work of others, dividing up and accounting for grants, and creating scientific consensus. Also addressed and then rejected is the idea of an intricate global conspiracy propagated by unethical scientists jumping aboard the climate change bandwagon. To persuade those on the board that most scientists are not swayed by money, this person combines personal testimony and snark: “I am a biologist because I was that weird kid who loved bugs (it helps that my father was one too). I teach high school. When will I be getting my millions?” Instead, this person explains, it is the politicians and corporate scientists working for the oil and gas industry who generate climate change denial for lucrative financial gains. To further their case, Angry Kittens provides several examples of organizations who have funded questionable scientific research and manufactured doubt, such as the Western Fuel’s Association \$510,000

campaign (1991) to discredit global warming and Exxon Mobil's fight to hide the environmental effects of burning fossil fuels. AK also calls attention to one of the erroneous assumptions behind the greedy scientist metaphor: the conflation of popular science communicators with scientists who do research.

David Suzuki is not primarily known as a scientist. As you've already said yourself. He was a famous radio and TV science host in Canada long before he started actively campaigning for climate change awareness. A TV host, which in itself pays very well.

Same thing with Al Gore. Stop confusing them with the actual people who are doing the studies. People you have never even seen or heard of before. Like the people in this video. Are any of them billionaires?

Unethical, greedy climate scientists and the "fake" 97% consensus are just two of the many conspiracies in this long conversation that Angry Kittens and others attempt to debunk. They also confront the myth of the supposed government scientific complex controlled by the United Nations. In the conversation lead by AK, some commenters also narrate their own experiences with climate change skepticism:

My brother was like you a while ago, until he saw sense. Thinking he was "the smart one," because he was "seeing through" the bullshit. He thought climate change was some sort of double bluff, and that "believers" were believing in a hoax just to make Al Gore money. I always knew this was bollocks. It's easier to believe people telling you that we should just carry on with business as usual. It's more comforting. And you might even feel clever, too, telling all these "hysterical environmentalists" that they are being insane, and that they have been sucked in by "the establishment," and that "Global Warming is a 1.5 trillion dollar industry." (Make A Halo)

Despite the presence of paranoid anti-climate change comments in the conversation, those on the board, perhaps inspired by Angry Kittens, also adopt the roles of patient and rational science communicators, talking to other skeptics while providing secondary sources to back up their claims. AK's remarkable endurance is commended by another person: "I've

read everything you wrote and can't believe you stuck around for so long arguing with a bunch of rocks” (Lothian Belanger).

Sometimes, however, those speaking for science get so frustrated that they become the trolls themselves. ExperienceCounts2, who motivates one of the longest conversations on Oliver’s *CC Debate* board (226 likes and 155 replies), considers himself a seasoned climate change educator and myth-dispeller. His parent-level comment is a long (and, perhaps, badgering) list of questions that he claims to post to various online forums to engage with and then shut down skeptics. In short, he shares basic facts about science and climate change as well as tactics to discredit the climate change conspiracy. Along with affirming consensus and dispelling trenchant climate change myths, he articulates the processes of peer review and vetting sources, and the difference between scientific evidence and opinion. For instance, he explains that the supposed international hoax of global warming is both impossible and ridiculous, simply because it would have to consist of all these disparate stakeholders:

climate scientists, knowledgeable scientists from other fields who understand the nature of data, researchers and engineers who collect the data, universities and organizations who sponsor or endorse research, the scientific journals who publish the papers, the science journalists who report on the science, hostile groups looking for errors in the science (especially other scientists with competing theories), several dozen trusted institutions like the national academies of science around the world, professional organizations, and investigative journalists of any stripe.

Although his reported goals are debunking climate change myths, he impatiently trolls deniers and skeptics. He also becomes increasingly frustrated, if not irate, when his arguments are rebutted with dubious opinions from *The National Review*, *WattsUpWithThat*, personal blogs, and so on. The degeneration of his conversation reveals

how even the best-intentioned communicators become frustrated when repeatedly confronted with the rejection of scientific expertise and with climate change denial.

6.4 Negative Commenters: Resisting Climate Change Messaging and Promoting Climate Change Myths

Despite the positive interactions, there is a struggle on the board between those affirming climate change and discussing the conditions of its denial and those rejecting the climate crisis and continuing to spread disinformation. Those rejecting Oliver and Kimmels' satirical climate change comedy adopt a number of connected tactics. They reject Oliver's and Kimmel's credibility as climate change communicators, question the authority of climate science, and re-assert prevalent climate change myths. These deductions are based on similar patterns observed from both my initial survey of the boards (common themes from the probability sample) and from the content derived from the longest conversations and most upvoted comments (deeper dive) .

6.4.1 Distrusting Celebrity Science Communicators

On all of the comment boards, there is significant distrust of celebrities and their activist causes. The negative commenters affirm that celebrities should focus on entertaining rather than educating and persuading. According to the responses, when celebrities engage with climate change, they are guilty of being uninformed hypocrites and out of touch progressives hopping aboard the most recent environmentalist bandwagon. Chris Laforest, for instance, questions Oliver's concern about the Paris Agreement: "Oliver is chewing on the bit with everyone else. I wonder if he believes it, or just reads the prompter?" Because of Kimmel's background, his approachability, and his mainstream

program, the sentiment expressed against his climate change messaging is even more vitriolic. Kimmel is sporadically targeted on both boards for “selling out,” for aligning with overly liberal and political celebrities, and for not accepting that Donald Trump is the legitimate president. Feedback for Kimmel’s *Hey Donald Trump*, for instance, consists of several substantial, disapproving discussions of the comedian’s unfortunate transformation from a harmless late-show host to a disingenuous political commentator whose obsession with the president has damaged both his comedy and his fanbase. Others reject Kimmel’s climate change messaging because of his celebrity and the substantial carbon footprint of his program and his lifestyle. Brackus, for instance, suggests that the wealthy, the main drivers of climate change, are merely virtue signaling; they don’t really care about climate change and are merely taking up environmentalism to gain media attention and to increase their prestige.

Many commenters also segue from their criticisms of Oliver and Kimmel to frame climate change as a liberal issue concerning only celebrities and leftist scientists. The argument goes as follows: because celebrities and scientists are primarily liberal, their statements about and research on climate change are ideologically inflected and therefore untrustworthy. When Oliver and other late-night hosts address climate change and related controversial issues, they, like the scientists they support, are merely puppets of the liberal-controlled climate-change affirming infrastructure. Voicing these concerns is Ed Wilkins, who claims that the scientists behind the 97% consensus are “funded by appropriations from the US Treasury (tax-payers), DEM Party multi-billionaire crony-capitalists; George Soros, a world currency manipulator, Michael Bloomberg, a media mogul, Wall Street hedge-fund financier and employer of Hillary’s son-in-law, Warren Buffet, owner of BSF&

N railroad, Bill Gates and the Hollywood Liberal cartel.” That the liberal illuminati are behind the global warming hoax, bankrolling climate science, and planning to profit from green industries are themes that repeatedly emerge. In fact, an analysis of the uses of the word *liberal* in all of the comments from Oliver’s *CC Debate* and Kimmel’s *Scientists on Climate Change* revealed that this word is frequently used as a derogative adjective to describe bias, lies, propaganda, atheists, communists, and sheeple. Liberals are also depicted as hypocritical in their causes, choosing when to believe in the expertise of science: “They are at the front of the anti-vaccine, anti-pesticide, anti-nuke and organic food movements” (joe cole).

Negative commenters reject Oliver and Kimmel not only because of judgments against their liberal celebrity status, but also because of their lack of expertise. On the *CC Debate* board, commenters rebuff Nye and Oliver as climate change communicators because they evaluate celebrities as neither trustworthy nor credentialed to speak for climate science. Nye’s status as *only an engineer* who has never conducted research in climate change nor published a peer-reviewed journal article also counts against him. Commenters who make these claims ignore or discount Nye’s work in citizen science and his long tenure as a scientific communicator, seeing him as merely a celebrity who loosely talks about science. Personal attacks are also used to discredit him: “Nye was never any good in his group at Boeing. That was just his day job when he learned stand up” (Clark Magnuson). Nye “is just another TV personality” (CountBifford), a social justice warrior, a liberal shill, and a handy tool of the liberal fake news media. The majority of those who claim Nye is not a scientist contend he is merely an actor, seemingly implying that one cannot be a credentialed scientist and an entertainer simultaneously. The rejection of Bill

Nye also points to another hypocritical stance on the board; even though commenters regularly decry that climate science is not a legitimate discipline, they maintain that only climate scientists may address the topic of global warming.

Commenters who are the most angry at Oliver and Kimmel, those who express themselves through spiteful ad-hominem attacks on the comedians, reveal the divisiveness of the topic of climate change. Oliver is called the worst comedian ever (a hack), a funnyman but not a thinker nor a journalist, a liberal clown, an idiot who couldn't understand the Paris Agreement, a progressive alarmist, and an "inbred English TWIT" (Neil Murray). One viewer expresses sincere disappointment in Oliver's handling of the climate change issue. He confesses that his enjoyable binge-watching of *Last Week Tonight!*, "which had all the best parts of John Stewart, and Colbert packed into one," was summarily interrupted by the debate episode from 2014. According to Tyler Phaboonheuang, Oliver was misguided when he chose to address climate change, which belongs only in textbooks and classrooms. "WHY DID YOU HAVE TO FUCK THIS UP FOR ME OLIVER," Tyler P asks. Even though Oliver previously addressed other contentious topics, such as the treatment of Edward Snowden, President Trump, LGBT soldiers in the military, science is so off-limits and climate change attitudes so polarizing that one episode completely ruins the program and Oliver's mystique for this budding fan.

Similarly, for raising the subject of climate change, Kimmel is labeled a clueless comedian, a triggered leftist, a propaganda spewer, a brainwasher, a proselytizer, and an unfunny late-night host. Negative commenters also repeatedly lament that Kimmel has ruined his program and destroyed his fan base by dedicating too much time to satirizing the president and his policies. Kimmel has betrayed not only the tried and true genre of the

late-night television talk show, but also his conservative fans. Responding to *Scientists on Climate Change*, goelpunk complains, “I thought this was supposed to be an enjoyable time to sit down and watch a late show before bedtime. I mean once or twice is fine. It just seems that it is happening all the time now.” “We tuned in to late night TV to laugh and get away from politics and left-wing loons like Kimmel and Colbert are shoving it right back in our faces” (weallbfree).

On all comment boards, then, there is considerable resistance to comedians making serious and/or political statements and addressing the contentious topic of climate change. Opposition comes from both those who decry climate change alarmism as a liberal cause and those who think that comedy should not address serious content or take moralistic and/or political stands. In the feedback for the *CC Debate*, commenters regularly boundary mark and invoke arguments from purity: comedy is funny, not political or biting; Oliver is not a “real” comedian or science communicator. Angry commenters and ex-fans reject Oliver for straying from his supposed main purpose of entertaining and for riskily engaging with public affairs. Conservative viewers remind others that Oliver “is a comedian folks, not a meteorologist, not even a reporter” (Jerry S) and he should “stick to comedy instead of logic” (Ignacio). “*Last Week Tonight* should be taken as what it is, a short well-presented comedy show, not the basis of an informed view of world issues” (Meaghan Z). Remarks like these, which mainly originate from viewers who confess their conservative views, express the fears that Oliver’s program and others like it are blurring boundaries; they are dangerously disguising journalism as comedy, presenting a skewed liberal vision of public affairs, and impairing the populace’s critical thinking. Alternatively, progressives concerned about climate change worry that Oliver and his fellow comedians are

“trivializing a serious issue” (desi derata) by blending science communication and humor. Climate change, they say, is no laughing matter.

In the disapproving comments, there seems to little to no appreciation or understanding of the discursive integration offered by satirical television: its potent blend of journalism, comedy, and politics is not suitable for the loaded subject of climate change. An examination of the terms *comedy* and *comedian*, in fact, on all of the four boards, discloses that they are used mostly as insults, marking barriers between the appropriate subject matter of and tone of comedy. Underlying many of these remarks are five connected claims: comedy is meant to invoke laughter, not educate audiences or take political stands; Oliver and Kimmel are merely comedians, so they have nothing worthwhile to say and should not be heeded; because their programs are biased (with a leftist slant), the information they offer is necessarily corrupted; climate change is one of those polarizing subjects that comedians must avoid; and those who respect comedy (or get their news or information on public affairs from comic late-night hosts) are irrational.

In these insults and the repeated assertions that Oliver and Kimmel should not target climate change deniers nor belittle the president, commenters indicate a misunderstanding of satire’s approach, particularly its bite, targets, and potentially corrective function. Many commenters also do not comprehend satire’s longstanding connection to politics. Even though Kimmel’s *Hey Donald Trump* is a blatant parody, many commenters seem not to recognize it as such, let alone understand that satire may criticize its targets while engaging in low humor and silliness. Several reject this PSA because it is part of a continuing pattern of Kimmel’s continuing disrespect of the president: “You may not agree with what Trump is doing but there’s no need to get ugly” (Jasmine Bykerk). The implications here are that

the mark of the president is off limits and that comedy should always be good-natured and never mean-spirited.

6.4.2 Rejecting Climate Science and Promoting Climate Change Myths

The feedback on the comment boards also exposes the longstanding effects of disinformation campaigns in promoting climate change as a controversy. These effects are most apparent for Oliver's videos, which directly attack these campaigns. Despite Oliver's complex, convincing, and expertly sourced arguments, responses to his monologues disclose almost routinized climate change denial, particularly that climate change is not a problem and that climate science is *still* unsettled. The most common myths on the *CC Debate* and *Paris Agreement* boards, respectively, are the themes that global warming is a hoax; and climate change is cyclical, natural, and not human-caused. (Please refer to the table under section 6.2 for more details). On both boards, many commenters label global warming as a swindle perpetuated by a cohort of liberals and scientists obsessed with taxing Americans, destroying the oil and gas industry, eroding personal liberties, securing research funding, and dramatically redistributing wealth. There are also the common claims that people should not be concerned about climate change because the warming process is cyclical and natural, the Earth has been colder before, and humans have no significant impact on the environment. John jt asks, "How much longer will we have to endure the endless ranting of the eco cultists? The Earth is showing signs of a cooling cycle. That's what we should be focused on." These myths are more dominant on the debate video comment board, as if users are launching a counter-attack on Oliver's powerful consensus messaging as well as his claim that American climate change skeptics are overtly wrong.

On Oliver's *CC Debate* board, for instance, Christian Rioux's remark contains several myths: there is no warming, the earth has been hotter before, scientists are not in agreement, the consensus was based on a faulty poll, and sea ice is increasing. He ends his comment with this affirmation: "Humans don't affect the climate, solar cycles do. Get over it. It's a political scam to get your money and control you."

Although "there is no scientific consensus" accounts for only 2.8% of the feedback on the *CC Debate* board, this statement is asserted quite vehemently by naysayers, almost like a mantra. One commenter claims that the 97% claim is "fraud! That's what it has always been" (Libertarian Nexus). Many users reject the consensus because they assume it was derived from a faulty "poll," from suspect articles using bad research methodology, or from conspiring scientists. Oliver and Nye are uninformed fools for supporting and advertising this consensus. On the overall comment board, the word consensus is used derogatively: the 97% consensus has been debunked (97% of scientists don't agree on climate change and its causes and many dissenters were ignored); the 97% statistic is exaggerated (it is only 30% or even 4%, some say); science isn't about consensus or popularity; those affirming the consensus are not wise, but merely true believers of the cult of climate change or victims of the "consensus clowns." A significant number of comments resist the consensus by attacking the man who best publicized it: John Cook. When they reject Cook's bibliometric study, commenters reference his supposed flawed methodology, suspect conclusions, progressive politics, and questionable credentials, with one user denouncing him as only a self-proclaimed cartoonist / web / graphic designer" (Nathan Ellis).

Those on the board also use their critiques of Cook's consensus to assert a related, but powerful argument: science proceeds not by people voting on theories, but by lone skeptics and maverick scientists bravely asking questions, pushing at the boundaries, and overturning seemingly solid paradigms. To make their cases, users cite the once popular views that the Earth was flat, that the universe was geocentric, or that the atom could not be split. Climate skeptics, then, are equated with other heroic dissidents who risked their lives and careers to challenge orthodoxy and spread truths. At the same time, there is significant hypocrisy establishing the level of agreement for constituting consensus. Skeptics hold an unreasonable standard of proof for climate change consensus; they insist that 97% agreement is not enough, but regularly contend that 3% disagreement is sufficient for discrediting established theories: "Appeal to authority/appeal to majority. If 3% of scientists don't believe humans are causing climate change, then perhaps they are right" (hihihitaytaytay). Although commenters attempt to counter these naysayers by recognizing that science may be fallible, statements equating the scientific consensus with the abuse of authority persist. In short, many on the boards demonstrate a misunderstanding of the process of creating consensus and a deep suspicion of all types of authority and expertise.

On the *CC Debate* board, comments debunking the consensus regularly reference one renowned skeptic to make their case: Judith Curry. Curry (2013) argues that mainstream climate scientists have deceptively suppressed the uncertainty in the four original IPCC reports to create the appearance of a united front on climate change. Many appropriate her argument that enforcing consensus is both inaccurate as well as antithetical to the dissension model of science: they support the view that scientific progress occurs via subversion of consensus in favor of new experiments, ideas, and theories. They also cite

Curry's contention that responsible scientists are supposed to teach critical thinking, which they wholeheartedly reject when they embrace the ad-populum consensus argument and label their dissenting climate-change doubting peers as cranks. Of the forty-three mentions of Judith Curry on the entire *CC Debate* comment board, thirty-four are positive, celebrating her brave challenges to the Intergovernmental Panel on Climate Change (IPCC) reports and her unveiling of the CAGW conspiracy. The other nine remarks ask questions about her motives and expertise.

Similarly, despite Oliver's painstaking explanation of the protocols and important goals of the Paris Agreement and his analysis of the president's misunderstanding of this accord, negative responses to his video repeat familiar conflict frames used to discuss climate change: the economy of the U.S. versus the environment; oil and gas versus renewable energy; and, the most frequent, American economic interests versus global interests. Several naysayers seem to jump on the board without actually watching Oliver's detailed explanation, expressing automatic visceral reactions that repeat these frames. They reject the accord, which is "garbage and easily exploitable" (Coolest Wookie in the Soyhole), because it is unfair to America's industries and economy. People vaguely cite the agreement's cost of tens of billions, if not trillions, of dollars without providing references for these exaggerated figures. Relying on the America vs. the world conflict frame, commenters reject the Paris Agreement because of the supposed unfair advantage it provides other countries involved in their own industrial revolutions, such as China and India. Echoing President Trump's concerns, commenters imagine that China and India will recklessly continue building coal-fired plants and polluting the environment while the U.S. coal industry suffers. John Oliver's support of the Paris Agreement, which will damage

America, is hard evidence that he is “a Globalist Shill paid to promote big government propaganda to the sheep that will listen. The Paris Accord was completely one-sided and was about money” (Myrdoc).

Those on Kimmel’s comment boards also recruit trenchant climate change mistruths to discount the comedian’s climate change messaging: climate change is a swindle, climate science is illegitimate and/or biased, and the 97% consensus is a hoax. By far, however, the largest reason for disapproving of Kimmel’s *Scientists on Climate Change* is the belief that climate change is a conspiracy concocted by liberals, eco-hypocrites, the government, greedy scientists, globalists, the corrupt organizations of the IPCC, National Oceanic and Atmospheric Administration (NOAA), and NASA, or a combination of these groups collaborating together. The goals of this conspiracy are funding research, increasing taxation, controlling U.S. citizens, and stalling American progress. A focused analysis of the complete set of comments found that the word *hoax* appears in 55 comments, conspiracy in 49, and scam in 100, with most of these nouns connected to climate change. *Conspiracy*, likewise, is applied only to scientists and almost never to those who work to manufacture climate change doubt. In short, the longstanding effects of disinformation campaigns appear in blatant dismissals of the climate change problem as well as Oliver’s and Kimmel’s attempts to publicize it.

6.5 Promoting Climate Change Denial: Intelligent Trollers and Repeat Commenters

This section continues to analyze how the reaction against satirical comedy provokes people not only to restate trenchant climate change myths but also to return to the YouTube

boards to push back against changes in the climate change narrative, causing surges in commenting. Some commenters who propagate climate change denial seem to have a stern commitment to spreading doubt, migrating between boards and revisiting them to disseminate disinformation. Here, I focus on examples of the three main types of commenters who seem the most adamant at spreading climate change disinformation: intelligent trolls, repeat commenters, and board hoppers.

Intelligent trolls, who appear on all the boards, are educated in the major climate change denying arguments as well as extremely articulate; they use their significant knowledge and argumentative skills to post witty, yet irritating responses. In my selected videos, perhaps the most virulent skeptic and intelligent troll is Equis Narnd, who contributes one of the earliest responses and starts the longest conversation on Oliver's *CC Debate* board. His remark is quite simple: a link to a Judith Curry article debunking the 97% consensus. This minimal move invites others to respond, allowing him to interject and assert Curry's argument that the scientific consensus on climate change is flawed. When confronted, Equis Narnd and others then rush to the defense of Curry and other maverick scientists who challenge (what they perceive as) questionable climate science, but who are rewarded with silence and ostracization by the scientific community. As people discredit his opinions, EN quickly steps in, correcting their incorrect views on climate change. One of his typical strategies is asking his interlocutors to provide evidence from journal articles that explicitly states human-caused climate change is happening, content typically not found in the tentative, understated conclusions of peer-reviewed scholarly sources. He is unrelentingly stubborn: regardless of whether his comments receive verbal support or

condemnation, he continues to stand his ground, backing up his claims with questionable scientific evidence.

Equus Narnd represents several noticeable trends on the comment boards. First, he represents the dogged tenacity of those who frame climate science as a corrupt, hegemonic enterprise dominated by out-of-touch elites. Climate science is so corrupted from nefarious connections with the powerful and the wealthy that its research is not trustworthy, he and others claim. Climate skeptics, on the other hand, are brave mavericks exposing the truth about climate science and its corrupt politics. Second, he exemplifies those educated, persuasive, and obsessive skeptics on the board who are well-versed in several climate change-denying tactics. Although he does descend to name-calling, his posts usually display a restrained erudition, a thorough understanding of logic, and a wide knowledge of climate-change-denying literature. In fact, the readability and difficulty of one of his regular comments demonstrate how his vocabulary and syntax surpass those of the typical YouTube troll. In one typical comment¹³, Equus Narnd recruits metaphors (warmistas, flamingo killed with hockey stick), allusions (Leviathan), expert references (Michael

¹³ Many of the Progressive Puke Warmistas formulate bogus questions and snap their suspenders while they strut their stuff. One of them is, 'Can you name any institutions that deny global warming?' Or words to that effect. The Australian Meteorological Society is one. They prevented the bureaucrats who run their offices from putting out a statement about CAGW.

And here is another example...small progress for sure, but the Warmistas are a Leviathan compared to the 'working out of their garage' skeptics.

Thanks to Hubert Lamb and others, an evolving understanding of climate variability over the past millennia had evolved. Michael Mann arguably killed the climate pink flamingo with his hockey stick, arguing for trivial natural variability over the past millennia.

No, the pink flamingo was merely stunned. Some of us are trying to revive her. Phil Jones and the met office now believe in greater natural variability than they did just a few years ago and the met office were persuaded

Mann, Thomas Lamb), climate change terminology (natural variability). His original comment (I ran it through a plagiarism detector) has a Flesch reading level of grade 10.41, which is above that of a typical article from *The New York Times*. In terms of readability, his comment also receives a Gunning-Fog index of hard to difficult, which means that EN's comment is characterized by long sentences and words with several syllables (Readability analyzer, nd). To put those numbers in perspective, his passages are more complex in terms of readability, content, and figurative language than those of his major YouTube sparring partner and climate-change affirmer Experience Counts. He is also remarkably loquacious: when printed out, his rebuttal-driven, trolling conversation on Oliver's debate video board totaled well over 250 single-spaced pages, with most of his replies taking up at least half a page. Rather than inarticulate, Equis Narnd and many others like him use their intelligence to swarm YouTube boards (and perhaps other online sites) for the sole purpose of rationalizing climate change denial and exacerbating public confusion. He invests significant time and energy in promoting climate change propaganda.

The persistency of Equis Narnd motivated a focused search of the entire comment board to locate other self-professed skeptics who comment periodically. Besides Equis Narnd, the biggest climate change deniers on Oliver's *CC Debate* board are Libertarian Nexus, Steve Dekker, and Trevor Marr, repeat commenters who return at intervals and all make between 30 and 40 remarks each. Steve Dekker, who rarely creates original parent-level posts, spends most of his time making negative and disagreeing quips that, in various ways, reject climate change. He also has visited the comment board repeatedly: in July, August, December of 2016 and January and April of 2017, all on different dates.

I want to focus briefly on one repeat commenter and board hopper, Trevor Marr, who makes frequent remarks on the boards for Oliver's *CC Debate* and for Kimmel's *Scientists on Climate Change*. His feedback on Oliver's debate consists of 28 comments: five parent-level responses and 23 replies. In his first response in 2016, Marr implores Oliver to stop amplifying climate change's effects before linking to the film *Climate Hustle*, which is actually the subject of Kimmel's segment. There is a sense that Marr was jumping between the boards for both videos to spread his brand of climate change denial. Similar to Equis Narnd, Trevor Marr enforces climate change myths, such as the swindle of global warming, the reality of the previous ice age, the naturally changing climate, and Al Gore's exaggerations. For the latter claim, he cleverly argues that AGW should really stand for "Al Gore was Wrong." To these persistent myths, he adds the argument that the U.S. and Canada need *more* not less oil exploration not only to aim for energy independence from the Middle East but also to evolve as societies. He expresses, in fact, an almost fervent zeal for the oil and gas industry, mining, the free market, which he claims are all mandatory for advancing civilization and solving the world's problems.

Marr also frames acting on climate change and environmentalism in general in terms of risk as well as the conflict frame of the economy versus the environment. He regularly argues that North Americans must choose between stable and progressive fossil fuels or unstable and regressive alternative fuel sources and their dubious technologies. He asserts, "we have far more to fear of a life without fossil fuels, than we ever should fear life with their benefit and protection!" He also pits acting on the climate against technological and human progress: those who want to save the Earth and the environment have an anti-human and anti-progress agenda, which will only bring doom and economic distress. In making

his claims, he regularly relies on false equivalency: people are either with the fossil fuel industry or with the environment. There is no available compromise. All of his remarks resemble dramatically punctuated talking points: “Human evolution advances forward by capability, not backwards with the ‘incapables’! On Kimmel’s *Scientists on Climate Change* board, Marr’s comments are both more frequent and more frantic; he makes 190 posts, almost all of them responses to others. Here, he has strengthened his message that AGW is a hoax/scam/lie perpetuated by a powerful cohort of liberal elites: “I have come to the conclusion that Climate Science = Collusion = Job Security = Taxation = Control = Corruption = Liberal/Democrat Scam! I think that is the Catastrophe!” To his previous assertions, he has added a transhumanist spin: fossil fuels, which drive progress and human evolution, will eventually result in a super-intelligent race who will solve the negative problems caused from developing resources.

Although all videos receive the majority of their feedback upon their initial release,¹⁴ they still draw repeated and staggered feedback. There are also surges in feedback on all comment boards. Repeat commenters are also largely responsible for these surges, which correspond with developments in the climate change narrative. For both of Oliver’s videos, there are commenting spikes in January 2018 and in September 2018, with the feedback for the debate video continuing to climb until December 2018. In December 2017 (72 comments), and in November 2018 (65 comments), there are also small surges on

¹⁴ Oliver’s “CC Debate segment,” for instance, had 3949 comments and over five million views in its first year whereas between 2015 and 2018, it drew an additional three million views and these comments, respectively: 1938, 1769, 756, and 740. At the time of this writing, this video now has 8,232,510 views and 9,191 comments. Even more extreme is the comment distribution in Oliver’s “Paris Agreement” video, which drew 13,776 comments in 2017 and only 982 in 2018.

Kimmel's *Scientists on Climate Change* board. (Visualizations of these spikes in feedback are included in Appendix A.)

A few of these commenting spikes correspond with the release of official documents: the National Oceanic and Atmospheric Administration (NOAA) State of the Climate Report from December 2017; and the National Climate Assessment (NCA) and UN Intergovernmental Panel on Climate Change (IPCC) reports from November 2018. The NOAA report, which addressed weather patterns, dramatic new records, and extreme events, also recounted all the historic precipitation lows, temperature highs, and extreme weather events of 2017, painting a dire picture of the mounting effects of climate change on America. Newspapers also cited this report and other warnings from the climate change community in frightening year-end stories, such as a Plumer & Popovich's (2017) piece from *The New York Times* entitled "How Global Warming Fueled Five Extreme Weather Events." It was impossible to avoid the signs of climate change in late 2017; along with being (then) the deadliest year for wildfires, there were also fifty-four extreme weather events causing billions of dollars of damage (Berwyn, 2017). It was the IPCC report, which Roberts (2018) called "the largest clarion bell from the science community," that was the most disturbing. The report warned that urgent changes are immediately required to keep global warming under 1.5C, and that there is a decreasingly small window to avert a global catastrophe.

Other spikes, those from January 2018 and November 2018, correspond with certain events and announcements involving the president. January 2018 marked President Trump's attendance at the World Economic Forum in Davos, Switzerland and his corresponding first international television interview with Piers Morgan. Although the

president discussed several topics in the interview (feminism, Brexit, the U.S. economy), it was his misinformed statements on the Paris Agreement (similar to those in his June 2017 Rose Garden speech) and climate change that are relevant here. When asked about his stance on climate change, he blithely responded, “There is a cooling, and there’s a heating. I mean look, it used to not be climate change, it used to be global warming. That wasn’t working too well because it was getting too cold all over the place.” In his remarks, the president expressed several connected mistruths, such as the cyclical nature of climate change, the term *climate change* as a clever public relations’ move, and the supposedly record high level of the ice caps. Journalists and late-night hosts quickly censured President Trump’s comments as well as Morgan’s spineless interviewing tactics. On the January 30 episode of his program, Stephen Colbert lie-checked the president’s interview and its irresponsible climate change messaging. For February 2018, the time of another spike, the president announced additional rollbacks of Obama-era regulations and environmental protections. This month was also on its way to being the sixth warmest February on record (NOAA) whereas Arctic ice was at a record low for that time of the year (Plotkin, 2018).

November 2018, which saw ravaging Californian wildfires, was also a month in which President Trump made more climate-change denying statements. When he toured the scarred California landscape offering his sympathies, he re-stated that his position on climate change was unchanged. He later blamed the fires on bad forest management practices, suggesting that Californians should rake their forest floors, just as the Finnish regularly do. The president’s erroneous statements immediately caused controversy, such as sarcastic refutations of Finnish forest raking, pronouncements that the California wildfires were not natural, and assertions of the president’s misunderstanding of

environmental problems (Butterworth, 2018; Kelly, 2018). His comments also inspired silly memes and ironic selfies from Finnish people and the MARA slogan: “Make America Rake Again.”

Although there is no explicit verbal evidence on the board regarding these climate change developments, there is a correlation between them and surges in feedback. Statements about the climate crisis do motivate climate-change affirmers to lament that the climate crisis has worsened as well as express concerns about the problematic scientific illiteracy of political elites. On the *Paris Agreement* board, one person expresses, “I truly hope that the next American president will have at least half a brain” (M86). Another asks, “Why is there no scientifically competent politician available for the American presidency?” (Nimo Kali). After arguing that all elected leaders should have mandatory knowledge of scientific topics and advanced technology, someone provides an update on Scott Wagner’s candidacy for the Governor of Pennsylvania, indicating that Oliver’s message about CC denying political elites is even more relevant than ever.

For the most part, though, those who contribute to these surges stir up skepticism, repeat common climate change myths, and disparage celebrity climate activists. These commenting spikes occur on three of the four YouTube comment boards. (Again, for a visualization of these commenting spikes, please refer to figures 5 through 7, which are located in Appendix A.) However, I want to focus on the November 2018 surge from Kimmel’s *Scientists on Climate Change*, because it almost entirely consists of negative counter-reactions from one particularly stubborn repeat commenter, Rick TD. During this period, Rick TD makes four parent-level comments and 61 replies to others, which are various versions of the argument that Catastrophic Anthropogenic Global Warming

(CAGW) is a scam. Rick TD either forcefully repeats this claim only or substantiates it with reasons, such as the following: Kimmel is lying to his viewers about the hoax, Morano is a genius for revealing the truth in *Climate Hustle*, and the Earth is actually colder now than before. Of the 100 uses of *scam* on the entire comment board, 65, in fact, derive from Rick TD himself. (My research reveals that this user is not a bot, but a person who once had a minor YouTube channel.) Rick TD is also remarkably persistent. When I recently re-downloaded the comments for *Scientists on Climate Change*, I noticed that he was offering feedback once again: there are new comments from May 2019, February 2019, and January 2019. In these more recent replies, he has added to his repertoire of climate-change denying arguments. He is now promoting one of the main claims of the counter movement: CO2 is beneficial to the increasing greening of the planet.

Not content to dispense climate change disinformation on Kimmel's board only, Rick TD also opines on Seth Meyer's popular *The Real National Emergency is Climate Change* and Oliver's most recent monologue involving climate change (*The New Deal*). For Seth Meyer's segment (February 2019), Rick TD repeatedly revisits the board to engage in conversations and disseminate climate change myths (8 parent-level comments, 117 replies). At the time of this writing, he has commented three days ago, two weeks ago, three weeks ago, one month ago, two months ago, three months ago, and five months ago. That is, he has been sporadically offering feedback since the video's release, continuing to share new types of climate change denying comments. Most recently, he has been vehemently defending President Trump while denying the role of the oil and gas industry in spreading climate change disinformation. His comments become especially inflamed when he is confronted with possible policies and long-term planning on climate change.

Rick TD is also responsible for making 61 comments on the board for Oliver's 2019 monologue on the Green New Deal. All of these remarks, made upon the video's immediate release in May 2019, are frantic insults to other people or interruptions of conversations. On the comment board here, Rick TD's tactics have grown both more aggressive and more desperate. Along with iterating his favorite claim that catastrophic anthropogenic global warming (CAGW) is a scam, he frames the Green New Deal as a perverse strategy to remove American freedoms and install socialism: "Bill Nye is a Commie pushing the 'global warming/climate change' scam on you." Noticeably angry, Rick TD also references two YouTube videos to force people off the board and into the world of climate change conspiracies. He depicts climate change education to children as unethical political indoctrination, for which he references speeches from Holly Swanson and Alex Newman, speakers at Freedom Force International's Third Congress in 2016. (According to SourceWatch, Freedom Force International "is a network of men and women from all parts of the world who are concerned over loss of personal liberty and expansion of government power.") Similar to Rick TD is Libertarian Nexus. On Oliver's *CC Debate* board, his name appears 150 times, but he makes only 36 remarks, which all contain climate change disinformation. Instead of a troll, he is a catalyst on the board, inspiring others to continue his lines of thought: over 100 people agree with him or discount him, but he rarely responds.

Regardless of what comment board he lands on, Rick TD makes sporadic remarks as well as trolls relentlessly. He responds both to the most popular remarks and to the middling ones. What is constant is his dedication to spreading climate change disinformation, to defending conservatives while insulting liberals, to promoting climate

change politicization, and to edging people towards YouTube's plethora of CC-denying videos and their corresponding echo chambers.

6.6 YouTube Comments and the Old and New Conspiracism

Kimmel's and Oliver's satirical climate change comedy may be humorous, but the responses to it are worthy of serious consideration. On the boards, there is thoughtful discussion of the problem of climate change. The YouTube comment boards are places where people affirm that climate change is happening, discuss the American phenomenon of climate change denial, and debate the roles of political elites in stalling climate action. Frustrated commenters take on the roles of teachers, attempting to instruct others in science basics. In their feedback, people personalize and dramatize the climate crisis through narratives and eye-witness accounts, trying to move others out of skepticism and apathy.

These climate-change affirmers, however, are met by a force of deniers on the board, who often post more frequently and more fervently. That is, the YouTube comment board also reveals the negative role of satire's aggregative function and the dark side of comment. The popularity of Oliver's and Kimmel's climate change messages attracts those who take stands against celebrity science communicators and reassert persistent climate change myths and conflict frames. The latter comments reveal the continuing force and presence of planned disinformation campaigns. People revisit the YouTube comment board and reaffirm climate change denial to push back against changes in the climate change narrative, such as extreme weather events, scientific reports, or proposed policies. Satire also makes people frustrated and angry; many commenters respond by providing

disinformation, misinformation, and by trolling, name-calling, and bullying. When people behave this way, they confirm the worst fears about online spaces.

Skeptics on the boards who make the most forceful climate-change denying and science-rejecting remarks remind researchers of the longstanding effects of climate change disinformation campaigns. Those more resistant to both hosts' messaging seem to be following Frank Luntz's lead by (mis)appropriating concerns and theories from science studies. Science studies raised legitimate apprehensions about science—science is not always ideological neutral, nor objective, nor disinterested, nor fair to women or minorities. However, those stealing from science studies transform many of its concerns into powerful clichés and persuasive soundbites: there is no scientific certainty; scientists are guilty of chasing after prestige; and objective truth is always a philosophical hoax, for there are only valid perspectives (McIntyre, 2017). Some science studies experts have reluctantly admitted their responsibility in generating unfounded skepticism and unintentionally strengthening strategies for discrediting the scientific certainty on global warming. Bruno Latour (2004) has expressed fears that “dangerous extremists are using the very same argument of social construction to destroy hard-won evidence that could save our lives” whereas Michael Berube (2011) has similarly regretted how “the critique of scientific ‘objectivity’ and the insistence on the inevitable ‘partiality’ of knowledge can serve the purposes of climate-change deniers and young-Earth creationists quite nicely.” Whereas a straight line cannot be drawn between the interrogations of science studies and the post-truth tactics of climate change disinformation campaigns, Berube (2011) thinks it is naïve to believe that powerful conservatives were not listening in on the science wars and

appropriating the criticisms of scientific authority and objectivity for their own selfish purposes.

On the YouTube boards, there is evidence that the cogent concerns of science studies and post-positivism are regularly appropriated (as well as misappropriated and misused) by those who want to tear down climate science and perpetuate climate change doubt. There are several knowledgeable skeptics on the board who make arguments about what they see as the fallible science pervading climate change policies. Many of these adamant and articulate deniers promote the belief that climate science is unsettled, that university scientists are not trustworthy, and that “science advances only when heroic dissidents push at the frontiers of normal science” (Ceccarelli, 2011, p. 209). However, these heroic dissidents are being silenced by a global conspiracy that involves scientists, political elites, celebrities, and the United Nations—a plan whose goals are to reduce the freedoms of U.S. citizens and make America suffer on the world stage. It is their responsibility to appropriate the YouTube board to expose the global climate change conspiracy and the ostracization of maverick scientists.

Whereas those who steal from Frank Luntz’s playbook are practicing classic conspiracism, the new conspiracism is also at work on the YouTube comment board. Muirhead and Rosenblum (2019) argue that classic conspiracism, which involves gathering the evidence, connecting the dots, and inducing theories, however suspect (p. 2) differs from the newer version, which relies on unsubstantiated but forcefully repeated assertions. In the new conspiracism, there “is no punctilious demand for proofs” and “no close examination of the operators plotting in the shadows” (p. 3). Instead, in its desire to tear down, theories are based on innuendo and verbal gesture, which are then strengthened by

repetition. The new conspiracism is repeated and enforced by the new media, which “substitutes social validation for scientific validation” (p. 4). Whereas new conspiracism’s first target is political parties—and as such, its logic aligns with “radical, antigovernment Republicans” (p. 5)—its second is those knowledge-producing institution (p. 5), whom it targets to undermine “the universe of facts and arguments essential to reasoning about politics and policy (and everything else)” (p. 6). The old conspiracists would accuse climate scientists of being liberal, biased, and not entirely trustworthy, using examples to support their claims, but the new conspiracists reject specialized knowledge altogether, delegitimizing the truths of science without offering reasonable alternatives. For instance, Rick TD’s usual strategy is merely repeating claims without bothering to substantiate them, perhaps hoping that his forceful reassertion of disinformation and its subsequent magnification by others on the board will substitute for argument.

6.7 Learning about CC Communication Strategies from YouTube Comments

Although skeptical comments, such as Rick TD’s, are often very difficult to read, they nonetheless provide insight into the attitudes and values that promote resistance to and acceptance of climate change messaging. In this section, the experience of reading the comments is used to offer suggestions for improving climate change communication, which may go beyond the medium of satirical comedy. I recognize that these YouTube comment boards, which are dominated by Americans, do not represent the world, nor even a representative sample of the U.S. population, but that they do reveal why the most hardened skeptics resist climate change messaging. The conversations and conflicts on the

comment boards, then, reveal that to avoid confusing publics further and causing the backfire effect, climate change communicators should carefully choose their terminology and their approaches.

6.7.1 Use Precise Language

Clarity and precision are strategic to effective climate change communication. Several commenters on the YouTube boards express that all climate change communicators should refrain from using the term *believe* when discussing the reality of climate change, for this adjective equates expert scientific fact with opinion and provides naysayers with an easy way out: the problem of climate change is just an opinion that they might choose *not* to believe in or accept. Science, as many on the boards note, must always be described in belief-neutral terms (Elliott Alvarado from *Scientists on Climate Change*). But perhaps the best statement against this problematic language comes from TVCohoh (*CC Debate*), who reminds others that “science isn’t about belief or religion. Science is about facts, evidence and theories (that are based on facts and evidence.) Science doesn’t care whether you or I ‘believe in it’ or not.” Therefore, people persuading others about the current climate crisis should use belief-neutral language that affirms the facts about climate change.

Feedback on the YouTube comment board also suggests that another very specific terminology change might also benefit all science communicators. On the boards, the terms *climate change* and *global warming* are problematic; they are employed interchangeably by those who affirm both, a trend causing confusion. At the same time, skeptics sarcastically recruit *global warming* for an alarmist scenario that did not transpire whereas

the phrase *climate change* is often considered a clever public relations move (Wayne, 2015).

Because of often rampant confusion between the terms and the consequent mis and disinformation that might result, there have been suggestions that those discussing climate change should refine their language, such as by adopting the phrase *climate crisis*. This terminology change is necessary because the descriptive language has lagged behind the deteriorating state of the climate. More forceful terms are also necessary because scientists tend to write cautiously, speaking in abstract terms of models and probabilities, which may minimize the impending global catastrophe of climate change. The phrase *climate crisis*, alternatively, is transparent about the present dangers, “conveying urgency without hyperbole” (Dean, 2019). Some publications have already accepted the new phrasing. For instance, *The Guardian* announced that it would not ban any terminology, but it officially declared that it was updating its own style guide. In its own articles, it would replace climate change with *climate emergency*, *climate crisis*, or *climate breakdown* whereas *global heating* would replace global warming (Carrington, 2018). *Crisis* also implies that the climate catastrophe must be tackled *now*; it is not an abstract, distant issue requiring only future action. The online publication *Science Alert* has also reconsidered its choice of language in light of *The Guardian*’s decision.

My analysis of the YouTube comment boards suggests that Kimmel, Oliver, and other citizen science communicators should consider the repercussions of applying the phrases *climate change* and *global warming* as well as making clear distinctions between these terms. Adopting the terms *climate crisis*, *climate catastrophe*, and *climate emergency*, which correct the muted language of commercial journalism, is more

appropriate to the incisive intervention of satirical climate change comedy. Although switching to the term *climate crisis* would lend particular urgency to satirical messaging, it might, like the use of the word *denier*, alienate those who already evaluate climate change rhetoric as exaggerated alarmism. Thus, if Oliver and Kimmel were to embrace this new terminology, they would have to first contextualize its necessity.

6.7.2 Avoid Insulting Skeptics

Satire may catalyze communication, however erratic, in virtual spaces, but it may also, when it addresses climate change, disgruntle viewers and further polarize perspectives. Feedback on the comment boards suggests strategies that not only celebrities but all climate change communicators should use to limit the backfire effect.

Current approaches for persuading people of the climate change crisis are debated. The two main theses explaining why people fall for climate change fabrications (and disinformation in general) are the science comprehension thesis (SCT) and the cultural cognition thesis (CCT). The SCT argues that because “members of the public do not know what scientists know, or think the way that scientists think, they predictably fail to take climate change as seriously as scientists believe they should” (Braman et al, 2012, p. 2). The SCT is behind efforts to correct science deficits and to improve citizens’ knowledge about climate change, such as Cook’s valiant work in publicizing consensus. Alternatively, the CCT posits that “individuals, as a result of a complex of psychological mechanisms, tend to form perceptions of societal risks that cohere with values characteristic of groups with which they identify” (Braman et al, 2012, p. 2). Or to put it another way, individuals

shape the truth, such as the reality of climate change, to suit their pre-existing ideologies, political affiliations, and group membership.

Rand and Pennycook (2019), in an article explaining the belief in “fake news” (their term), further characterize these two theories as belonging to the critical thinking and rationalization camps. Those in the SCT (critical thinking) camp concur that people are fundamentally reasonable human beings, so providing them with correct information, such as facts about climate change, should (ideally) enable them to use their critical thinking skills to distinguish facts from mistruths. Those in the CCT (rationalization) camp, alternatively, argue that facts are not as important as political affiliation or group identification. They hypothesize that when digesting politically charged or controversial issues, people use their knowledge to confirm biases and irrational beliefs (climate change is a liberal cause and not a *real* problem) rather than discover truths (Pennycook & Rand, 2019). This effect is especially important to the problem of climate change, which has been so politicized and polarized that many skeptics have not only rejected climate change but lost trust in scientific expertise (McCright & Dunlop, 2011; McCright et al, 2013).

The CCT thesis is foundational to the backfire effect. This effect is the tendency of people to reject information often viscerally—before processing it—that conflicts with their beliefs. That is, when people’s deepest beliefs are challenged by uncomfortable facts, they may reinforce their previous convictions. When an anti-President Trump liberal explains the climate change crisis, his arguments, however convincing, are rejected on the basis of their ideological bent; people then re-confirm their conservatism and their disbelief in climate change.

On all four boards, commenters often distrust the facts of climate change or promote alternative truths aligning with their pre-conceived values, such as climate change as an exclusively liberal concern. Self-confessed conservatives often reject the climate crisis and denounce irresponsible liberal scientists and comedians without engaging with their arguments. Some of these, such as Equus Narnd, use their seemingly substantial intellect to promote climate change disinformation.

I witnessed the backfire effect most strongly in response to certain strategies of Oliver and Kimmel, especially their promotion of the scientific consensus of climate change. Cook (2013) considers acceptance of the scientific consensus as a “gateway” belief; if people understand that the science on climate change is settled, they will then duly recognize the climate change crisis and encourage mitigation strategies and policies. However, the YouTube comment board reveals that enforcing consensus (without explaining how it is reached or what it means in terms of science) and belittling skeptics who question it are tactics that might exacerbate climate change denial. When the process behind scientific agreement on climate change is not explained, people regularly conflate consensus with *enforcing that science is a democracy*. They also see those promoting consensus as relying on the fallacious argument from authority. Their distrust of scientific consensus is often connected to a confusion about how it was derived. That is, on all four boards, the most resistant think that climate change consensus, that spurious 97%, was derived from only *a poll*.

These reactions are especially common from those who announce their conservative views and distrust scientists because they are supposedly all liberal and corrupt. On Oliver’s *CC Debate* board, for instance, Gari explains that “for most people, consensus

doesn't mean anything. They will tell you that the scientists are paid by the government, or simply that you could put Bill Nye in front of millions of scientists saying that God exists." Others similarly contend that enforcing consensus and shaming skeptics are liberal bullying tactics—the rhetorical equivalents of shoving “compliance down people’s throats.” Instead of understanding how science works, conservative commenters may feel forced not only to respect scientific authority without understanding why they are doing so, but also traitorous if they accept the liberal cause of climate change.

Thus, if science communicators want to persuade people from across the political spectrum to accept the scientific consensus, they need to explain *exactly* what consensus means and why it matters. They need to restore trust in scientific expertise by detaching climate change from politics and liberal Hollywood and by convincing viewers that science is not overtly politically biased. One strategy would be hosting credentialed climate scientists, such as Ben Santer, on their programs; or introducing their viewers to Katharine Hayhoe, who is a climate scientist, a climate change communicator, and a person of faith. Her involvement in the Evangelical Environmental network might reach those who reject climate change as a distant, liberal cause. Lastly, Oliver’s and Kimmel’s messages might stress that climate change is a national and global issue, and that hiding behind ideology is only going to worsen its inevitable effects.

Satire has the negative tendency to aggregate those who get (are in on) the joke and alienate those who are its targets. That is, those undecided about climate change might progress to denial if their skepticism is regularly equated with stupidity. In other words, name-calling not only makes people reject Kimmel and Oliver’s climate-change messaging, but also has more far-reaching effects beyond the board. If comedians want to

reach resistant skeptics and avoid the backfire effect, they need to moderate the mockery leveled at skeptics and keep their audiences (at least partially) in fun. Rather than painting conservative climate skeptics as dumb, they might have referenced the anti-vaccine movement as evidence that Americans of all ideological and political leanings have been duped by disinformation campaigns. Oliver, Kimmel, and other concerned communicators should affirm the climate crisis without alienating those most in need of accurate information. Because satire is divisive, those using it must focus on attacking ideas and structures of skepticism, rather than people.

6.7.3 Dramatize and Personalize Climate Change

To avoid the backfire effect, celebrity climate change communicators must also stress that the climate crisis is a non-partisan issue affecting everyone; it is not merely a rich, liberal cause. They could deflate some of this resistance by acknowledging their wealth and their status while using fresh, emotional imagery and personalizing the climate crisis. Recent research has revealed the importance of drama and narrative in delivering persuasive messages about climate change. Researchers have found that whereas overly fearful messages may be demotivating (O'Neill & Nicholson-Cole, 2009), emotional messages are quite strategic for “motivating public response to societal issues” (Lewandowsky & Whitmarsh, 2018, p. 2). These authors continue to explain that “the lack of public engagement with climate change to date is at least in part due to a failure to communicate the issue in terms that resonate with individuals at a deeper and less distant level” (Lewandowsky & Whitmarsh, 2018, p. 2). Thus, climate change messaging, from both comedians and other communicators, should try to employ fresh imagery that

provokes an emotional reaction to climate change's long-term serious effects. Lewandowsky & Whitmarsh (2018) further document that images or stories that demonstrate the significance of climate change for valued objects, places, or people—without evoking demotivating fear—may be effective triggers for public engagement. The need for affective engagement must, however, be balanced with information that accurately conveys the impacts of climate change (p. 3)

Visuals of stranded polar bears may not persuade, nor abstract line graphs of temperatures rising—stale imagery that Oliver himself reflected on and subsequently mocked in his own *Paris Agreement* monologue. However, contrasting pictures of melting ice sheets and dramatic images of sea level rise over time are “legitimate illustrations of the consequences of climate change” that may engage lay publics (Lewandowsky & Whitmarsh, 2018, p. 4). Ironically, Jimmy Kimmel created an exaggerated version of this approach in his parodic PSA *Hey Donald Trump*. By depicting images of dried up putting greens and flooded luxury resorts, Kimmel engaged the president's interests while entreating laughter. Integrating images like these into satirical comedy without instigating demotivating fear and cynicism is one possible strategy.

Celebrities, in theory, might reach more viewers by personalizing the issue, becoming more authentic, reducing that distance between their onscreen and private selves. They could achieve this effect and make climate change more real to their viewers by following Kimmel's approach in making affordable health care both an individual and social cause. This strategy is especially important given the suspicion of the genuineness and credibility of celebrity activists that was witnessed on the board. Imagine these two scenarios: in the prelude to the parody *Scientists on Climate Change*, Kimmel includes a

narrative and a visual documenting his personal experience of climate change's effects. As an ex-resident of Las Vegas, Kimmel might have shown images of Lake Mead's shrinking water levels as well as pictures illustrating his time on the lake. Doing so would not only dramatize climate change, but also suggest that Kimmel is not an aloof celebrity immune to climate change's effects. Both comedians could forgo line graphs and impassive facts to show images of ecosystem change and environmental collapse right in fellow Americans' backyards. If Oliver and Kimmel found strategies to personalize and localize climate change while acknowledging that they are celebrities, albeit concerned ones, they might build better bridges to the most resistant viewers. I am, however, not suggesting that comedic hosts relinquish their satire altogether, but humanize it somewhat. Doing so might pre-empt those who automatically reject their messages because they are liberal celebrities overly critical of the current president and his policies.

That is, as celebrity climate activists, Oliver and Kimmel must recognize their responsibility when drawing audiences and persuading them of the climate crisis—their substantial positions in correcting the manufactured scientific controversy of climate change.

7 The Perils and Potentials of YouTube for Climate Change Communication

This final chapter recognizes the complex roles of satirical comedy and the YouTube comment board in communicating accurate climate change data as well as harmful disinformation. Section 7.1 articulates how the YouTube platform itself both exaggerates and intervenes on climate change disinformation. Despite YouTube's climate change denial problem, the activity on the board itself validates satirical comedy's ability to draw discussion as well as needed attention to the climate change crisis. 7.2 summarizes my research contribution while offering some future methodological and theoretical directions whereas 7.3 returns, once again, to the climate crisis and satirical comedy's potentially critical intervention.

7.1 Perpetuating Climate Change Misrepresentations: YouTube's Climate Change Denial Problem

I begin this final chapter by reminding readers of all the players and conflicting voices in climate change communication, disinformation, and propaganda: the commercial media, the radicalized right media ecosystem, planned disinformation campaigns, and political elites. YouTube's role in the misrepresentation of climate change, like that of these other players, is complicated. On one hand, the website exacerbates (and exaggerates) climate change disinformation, both in terms of its video production and its message boards. On the other hand, YouTube may expose people to accurate climate change information, both through the videos they watch and the divergent viewpoints they may encounter on its associated comment boards.

YouTube’s propensity for climate change denial videos is partially attributed to its business model “that rewards provocative videos with exposure and advertising dollars, and an algorithm that guides users down personalized paths meant to keep them glued to their screens” (Roose, 2019). For instance, edgy videos by self-proclaimed investigative journalists revealing conspiracies are quite popular on YouTube. As I was editing this chapter and searched for the terms “YouTube” and “youtube” in the full set of comments for Oliver’s *Paris Agreement*, users directed me to rants by Tony Heller, segments of *Infowars*, and a PragerU video. All of these offerings discuss the global conspiracy of catastrophic anthropogenic global warming (CAGW).

Prager U, on which I focus briefly, is one of the main sources of well-produced, persuasive videos disseminating climate change disinformation while affirming far-right values. Founded by conservative radio talk show host Dennis Prager in 2011, this non-profit organization “takes the best ideas from the best minds and distills them down to five focused minutes.” Its goal is supporting and spreading American values, particularly “the concepts of freedom of speech, a free press, free markets and a strong military to protect and project those values” (Prager U). Many of Prager U’s “short videos on big ideas,” which are aimed at both educational institutions and home-schoolers, argue that climate change is a hoax. Having a staid color scheme for the Prager U brand (navy, light blue, green, orange, and white), impressive infographics, and high production values, the organization’s videos appear both credible and professional. Two of their most popular climate-change-denying offerings are *What They Haven’t Told You About Climate Change* (3.6 million views and the thirteenth most popular video on climate change according to DeSmogBlog); and *Climate Change: What Do Scientists Say?* (2.2 million views). *What*

They Haven't Told You debunks anthropogenic global warming by arguing that the 21st century has experienced no significant heating. Because of YouTube's algorithms, after hardened skeptics or those hesitant about climate change watch one of these Prager U videos, they will then have similar fare suggested to them.

On the issue of climate change denial, then, YouTube may indeed enable users to migrate to their own private echo chambers, shrinking their worlds and diminishing their knowledge (Sunstein, 2001). Van Alstyne and Brynjolfsson (2005), extending Sunstein's echo chamber idea, described cyberbalkanization: the state in which the internet is populated by a plethora of special interest groups whose members share similar opinions and information, and, as a result, become hardened to outsider perspectives. In search of videos that deny climate change, people will encounter other connected conspiracy theories. It is often a short, *but bizarre*, leap from the supposed climate change hoax to speculations about chem trails, international lizard leaders, and the flat earth. Admittedly, radicalization is a slow process, but many people on far-right sites connect their slide to extremist views to YouTube, where they may easily access convincing, bias-confirming arguments from skeptics, far-right pundits, and various organizations broadcasting conspiracy theories (Evans, 2018).

In the bind of recognizing its climate change denial problem while still supporting freedom of speech, YouTube has added pop-up Wikipedia links explaining global warming at the top of *all* climate change videos. However, Cook argues that sticking on "a generic link to Wikipedia under denialist videos is like slapping a tiny band-aid on a large, open wound" (qtd. in Readfern, 2019). He also claims that adding a "fake news" label might backfire by angering climate-change skeptics and pushing them further into disavowal.

Instead, Cook suggests that YouTube should overhaul its algorithms to ensure that videos accurately explaining the climate crisis are regularly pushed up in the rankings.

Cook's suggestion is admirable, but because YouTube is a business enterprise that must attract viewers and dollars, its executives are unlikely to repair these faulty algorithms any time soon. However, satirical climate change comedy is one corrective, or at least a partial antidote, to YouTube's climate change denial problem. That is, the edginess and topicality of satirical climate change comedy; its potent combination of information, wit, and satire; and its easily shareable content make it a star in the YouTube universe. Unlike the balanced view of much commercial journalism—surveying the landscape of ideas on climate change without weighing in—the monologues of Oliver and Kimmel take firm and risky stands that get them noticed and circulated. The content and delivery of their messages make them competitive with the often equally sharp, well-produced, popular denial fare.

The entertaining edge of satirical climate change comedy, which makes it viral and visible—rise to the internet's top—also drives people to watch it on YouTube. When I recently logged on to someone else's computer and searched YouTube for *climate change*, the following selection of videos appeared in the sidebar: U.S. politicians on climate change, several documentaries, a mix of climate change denying videos, a video from the European Space Agency, a few short news reports, and satirical comedy clips by John Oliver and Bill Maher. This search result is a good sign; this person, who is quite conservative and a loyal follower of Fox News, received a balanced menu of accurate climate change information from YouTube, at the outset at least, blended with select videos on the climate change hoax. If she clicks on the naysaying videos, however, and travels to

other conservative sites, she will fall (further) into climate change doubt and its related conspiracies. When she used the “Filter” function and chose “most views,” one of the top videos, thankfully, along with two from Prager U, is Oliver’s *Paris Agreement*. If she watches Oliver’s monologue, she will be exposed to accurate information even if she eventually rejects it.

The edginess of satire also aggregates people around an issue or cause, turning the YouTube comment boards into public forums for climate change discussion. At their best, the comment boards become virtual spaces where people affirm climate change and the scientific consensus, discuss the causes of American climate change denial, confront and debunk climate change myths, and become impromptu citizen science communicators. When the comment boards serve these purposes, they live up to the positive conception of online spaces predicted by the internet’s earliest promoters, those who thought cyberspace would house the most positive features of interpersonal communications, internationalism and universalism, egalitarianism, openness, communitarianism and mutual service, and various personal and political freedoms (Castells, 1996). The internet, these experts hoped, would lead to a new era of participatory democracy through extensive online networks (Ackland, 2013, p. 11) that could enhance communication and promote change. For better or for worse, people do speak openly on the YouTube comment boards, often regarding these spaces as uncensored forums for free speech, getting particularly irate when their comments are censored and/or removed.

In spite of the conflict between climate change affirmers and naysayers, and the often dismal quality of interactions, I argue that satirical climate change comedy on YouTube does intervene in climate change denial by allowing at least some meaningful interactions

between disparate people while budging climate change out of the political and into the personal realm. Regardless of how and why people end up on the board, when they comment on satirical texts and respond to each other—sharing interpretations and opinions about climate change, discussing other related (or unrelated subjects)—they are mingling with those they might never have met in the face-to-face world. Or to put it another way, even when interaction is at its absolute worst, the comment board may counter the political homogenization found in other more partisan online spaces. Whether people agree or disagree with the video, the YouTube board may expose them to other viewpoints and emotional anecdotal evidence from both those inside and outside of America. In this virtual space, people hear voices confessing that climate change does not care about political affiliation, nor race, class, and gender; the climate crisis will harm everyone. It is also possible that at least *some of* YouTube’s lurkers, even if they do not participate in any obvious way, are witnessing these personal anecdotes, exposed to other perspectives. These anecdotes may resonate because they do not come from scientists or political elites or celebrities, but from regular citizens with nothing to gain from confirming climate change and everything to lose from ignoring the oncoming disaster. Although I admit to being overly optimistic here, there is at least some relevant communication about climate change happening on the YouTube comment boards.

7.2 My Research Contribution

In my inter-disciplinary project, I recognize the contribution of my scholarly work in three interconnected ways: in 1) problematizing YouTube’s contribution to climate change

denial, in 2) validating the corrective function of satirical comedy, and in 3) developing a methodology for analyzing YouTube comments.

As explained in the previous section, I see **my first contribution** as problematizing YouTube's roles in climate change communication—as both a disseminator of disinformation and propaganda as well as a potential forum, through its presentation of satirical comedy, for correcting climate change fabrications, for drawing significant audiences, and for enabling discussions about climate change. Researchers may choose to further investigate YouTube's climate change denial problem in terms of exploring the website's debatable dual ethical responsibilities in censoring disinformation and in promoting videos that accurately convey the climate crisis. They might also further examine if meaningful interactions about climate change occur on other YouTube comment boards.

Satire, at its best, is supposed to reflect the world and reveal a higher truth. I have theorized that satirical climate change comedy may hold up this mirror while offering a convincing, truthful, counter-narrative about climate change; it may shine a hot light on climate change denial and expose its corresponding conflict frames. It has the power to call out disinformation and conspiracies as well as interrupt the propaganda feedback loop. And as popular culture, satirical comedy entertains unsuspecting viewers while sneakily drawing them away from their self-created media silos. Although I recognize satire's slipperiness, **my second contribution** resides in further validating satire as both an informative and persuasive tool, as significant and critical popular culture. Researchers, such as Feldman et al. (2012), have often used surveys to empiricize satirical comedy's potential for delivery accurate global warming information. I see my project as adding to

their work: my analysis of the YouTube board becomes another measurement of satirical comedy's potentials and problems.

Throughout this dissertation, I have maintained that online comment is a valid source of data. To get another perspective on tricky, complex, and unsettling issues, researchers should consider taking a trip to the bottom of the web to read and then analyze unfiltered comments, whether they are on YouTube or other social media sites. My **final contribution**, then, is in demonstrating a detailed methodology for analyzing YouTube comments. My approach combines quantitative and qualitative analysis, avoids cherry-picking data, provides a thorough picture (multiple perspectives) of the board, and allows researchers to maintain an objective distance. The latter tactic is particularly necessary for reading troubling subject matter and for avoiding the inevitable researcher fatigue that accompanies this type of work. It is my hope that at least some previously reluctant researchers have been persuaded to consider reading the comments, to listen to all voices, especially when they hold views antithetical, if not repugnant, to their own. Ideally, my methodological approach will be appropriated, refined, and improved by others.

Although I see my contribution in what I have done, I also see it in what I have left to do. That is, there are several methodological and theoretical directions that could yet be explored. Below are summaries of some potential research directions.

7.3 Possible Methodological and Theoretical Extensions

- *Examine the affordances and constraints of YouTube as a public sphere.*

Throughout this project, I have considered the YouTube comment board as a humble virtual forum in which users speak about and speak back to satirical climate

change comedy, interact with each other, and, unfortunately, promote both mis and disinformation. Although users on the board often act, through their uncensored comments, as if YouTube must honor their freedom of speech, they forget that the website is a business that may remove and censor their remarks, which it regularly does. A possible research direction is further exploring the conflict between how users consider YouTube as an uncensored public space, or even a public sphere, and how YouTube monetizes content and censors both producers and watchers. That is, other researchers might return to Habermas (1962/1989; 1992) and those critiquing and revisiting his ideas (Fraser, 1990; Calhoun, 1992) to further explore the often antithetical ways in which YouTube does/does not function as a public sphere, perhaps coming up with new models and/or new terminology for the activity and interactions on its often contentious comment boards.

- ***Conduct a comparison of other YouTube comment boards.*** Future research might involve examining the reception of other examples of satirical climate change comedy, such as segments by Samantha Bee, Seth Meyers, and Trevor Noah, to assess whether their feedback is similar to that for Oliver and Kimmel. If the associated YouTube boards disclose the same persistent climate change myths, distribution of climate change attitudes, and corresponding conversations, my conclusions about the problematic reception of satirical climate change discourse could be extended and developed. If they disclose stark differences, they might shed light on the effectiveness of certain celebrity spokespeople, particularly how their

combination of authenticity and authority affect their approaches and enhance or reduce the effectiveness of their climate change messaging.

- ***Track YouTube board influencers.*** My project uncovered several vocal climate change deniers who appeared on more than one board, such as Rick TD and Trevor Marr. Further studies might involve investigating other YouTube climate boards—not solely those for satirical comedy—to track these influencers and analyze their strategies for spreading climate change disinformation and associated conspiracies. Because the term “YouTube influencer” has commonly been applied to noteworthy producers of videos and viral YouTube stars, I would have to develop another definition of influencers, such as frequent, persuasive commenters who hop between boards to promote agendas. Using Node Excel and network analysis to track top commenters as they migrate between boards would help empiricize and theorize the specific nature and spread of their influence.
- ***Consider celebrity activists as agenda-setters.*** Throughout this dissertation, I have presented Oliver and Kimmel as celebrity climate activists and citizen science communicators. Another possible conceptualization of their work in correcting climate change disinformation is considering them as agenda-setters (McCombs & Shaw, 1972) who use their influence to correct and stand in for commercial media. Node Excel, which maps networks of the sources that cover their (and others) climate change messaging, could provide a measure of Oliver’s and Kimmel’s influence on helping to set the public agenda. It might also be worth focusing on

Kimmel alone, whose interest in the climate crisis has been accompanied by frank commentary that marks his seemingly chancy shift to the left. That is, Kimmel represents the possible negative costs of (newly) authentic celebrities taking on political and politicized causes.

- ***Go beyond (and behind?) the board.*** Another possible research path, suggested by Orgad (2015, p. 48) is going beyond the board by interviewing those who engage in lengthy conversations; influence, bully, and troll others; or take on the roles of teachers and science communicators. Below are a few possible questions that might guide research beyond the YouTube board:

- What motivates the engagement of these users?
- What do they hope to accomplish by interacting with others on the YouTube comment boards?
- Do they similarly participate in other comment boards?
- Do they carry these arguments beyond the virtual world and into face-to-face communication?

7.4 Climate in Crisis, Still

I end with some final, unsettling words on the state of the climate. Ten years ago, atmospheric CO₂ levels were 385 ppm (co2earth). When I began working on this project, climate scientists were then predicting that atmospheric CO₂ levels would shortly surpass the dangerous tipping point of 400 parts per million. In April of 2017, these levels breached 410ppm (Nield, 2018) and have hovered around that mark since then; Xu et al (2018) nonetheless estimate 437 ppm by 2030. Currently, some scientists also speculate that the Paris Agreement's goal of a maximum temperature increase of no greater than two degrees

Celsius is insufficient to prevent widespread catastrophe (Dockrill, 2018). That is, this temperature cap does not consider all the potential multiple positive feedback systems—some not yet discovered—that will worsen current developments and further elevate CO₂ levels, such as the effects of melting permafrost soils (Dockrill, 2018). The news gets worse: the IPCC boundary of 1.5°C, supposed to be reached by 2050, “is likely to be passed in half that time, around 2030, and the 2°C boundary around 2045, due to accelerating anthropogenic emissions, decreased aerosol loading and changing ocean circulation conditions” (Spratt & Dunlop, 2019, p. 5). In their recent white policy paper on the security risks of climate change, the previous authors sketch out a 2050 scenario characterized by widespread ecosystem collapse, deadly heat for more than 100 days a year, increased extreme weather events, zones of nonviable agriculture, and chronic water shortages. The authors argue that because of these middle-of-the-road characterizations of effects, publics might think climate change is not a pressing issue, that there is still time to avert a global catastrophe.

Despite these developments, President Trump was still recently behaving as if the climate is not in crisis. In an unsettling story from *The New York Times* about the president’s continuing attacks on environmental regulations and climate change policy, Davenport & Landler (2019) add to the list: the president’s refusal “to sign a communique to protect the rapidly melting Arctic region” and his latest directives to soften the conclusions of climate science studies. For instance, James Reilly, director of the United States Geological Survey, has “ordered that scientific assessments produced by that office use only computer-generated climate models that project the impact of climate change through 2040, rather than through the end of the century, as had been done previously.”

This restriction prevents reports, such as the National Climate Assessment, from hypothesizing worst case scenarios and publishing harder conclusions. The president also created a new climate review panel led by physicist William Happer, who is known for attacking climate science and for associating with the far-right billionaire Mercer family. By rejecting facts, restraining scientists, and discrediting scientific expertise, the president has minimized the mounting evidence on climate change.

As I was drafting this conclusion, (Wednesday, Nov. 13), The State Department also declared “that the formal process of pulling out from the historic international agreement on tackling climate change is now underway and will be completed exactly one year later, which is the day after the 2020 election.” I anticipate warily watching how Kimmel and Oliver recruit their satirical comedy to address this new, and terrifying, development in the climate change narrative, and to assert the importance of upholding the goals of the Paris Agreement, regardless of the president’s official announcement. As Jitrapon Tiachunpun astutely says on Kimmel’s *Scientists on Climate Change* board, we unfortunately live in an upside-down world, “in a time when comedians speak the truth and politicians tell jokes.” When it comes to confronting climate change disinformation and propaganda, in speaking truths about the global climate crisis, we definitely need all the help we can get.

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9 Appendix A: Figures & Images

Figure 1. *Screenshot of CSV Format*

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
157	UgxixeKm	bigollamec	5 months	1.53E+12	Who said	1	FALSE	0							
158	Ugy93mgV	MugenTJ	5 months	1.53E+12	Obama is a	0	FALSE	0							
159	Ugy2Cj5sN	111sienna	5 months	1.53E+12	The same	0	TRUE	12							
160									Ugy2Cj5sN	realman n	4 months	1.53E+12	Bill Nye is		0
161									Ugy2Cj5sN	111sienna	4 months	1.53E+12	sure...and		0
162									Ugy2Cj5sN	realman n	4 months	1.53E+12	My point is		0
163									Ugy2Cj5sN	realman n	4 months	1.53E+12	We can m		0
164									Ugy2Cj5sN	realman n	4 months	1.53E+12	Everyone l		0
165									Ugy2Cj5sN	111sienna	4 months	1.53E+12	no the poi		0
166									Ugy2Cj5sN	111sienna	4 months	1.53E+12	and for yo		0
167									Ugy2Cj5sN	realman n	4 months	1.53E+12	Do you ha		0
168									Ugy2Cj5sN	realman n	4 months	1.53E+12	Also do yo		0
169									Ugy2Cj5sN	111sienna	4 months	1.53E+12	YOU ARE c		0
170									Ugy2Cj5sN	realman n	4 months	1.53E+12	They agree		0
171									Ugy2Cj5sN	111sienna	4 months	1.53E+12	maybe, if		0
172	UgzLINBZS	EF M	5 months	1.53E+12	CO2 is a gr	0	TRUE	4							
173									UgzLINBZS	EF M	5 months	1.53E+12	In 1827 Je		0
174									UgzLINBZS	EF M	5 months	1.53E+12	In 1850, Je		0

In Figure 1, observe that the CSV file format presents the information in this order: A (Comment ID), B (User Name), C (how long ago the comment was posted from scraping date), D (Timestamp), E (content of comment), F (number of likes), G (whether the comment has replies: False for No and True for Yes), and H (number of replies). If the comment has responses, such as the one above, most of this data repeats in columns I to N. Figure 2 is taken from a filter and sort of Column H in order to locate the comments with the greatest number of responses. In this example, Tesslyn Francis's comment motivates a conversation that has 129 replies and also 1588 likes (Column F), which means it is one of those remarks that generated both excitement and interaction on the board.

Figure 2. Screenshot of comments motivating longer conversations

	A	B	C	D	E	F	G	H
9	Ugjxhd7DI	Tesslyn Fra	2 years ago	1.48E+12	While Ame	1588	TRUE	129
10	UggBWgI2	FireofOne	4 years ago	1.42E+12	some peop	116	TRUE	128
11	UgjFpQIIR	Plato Smit	3 years ago	1.45E+12	If 97.1% o	523	TRUE	127
12	Ugj6cYvFM	Peter Wat	4 years ago	1.42E+12	Its no coin	242	TRUE	126

Figure 3: Screenshot from Oliver's *Paris Agreement* Monologue

Figure 4. Screenshot of the Dramatic Opening of *Climate Hustle*

Figure 5: Surges in Commenting for Oliver's *CC Debate*

Figure 6: Surges in Commenting for Oliver's *Paris Agreement*

Figure 7. Surges in Commenting for Kimmel's *Scientists on Climate Change*.

10 Appendix B: Tables for Case Studies

Table 1. Breakdown of John Oliver's
Statistically Representative Climate Change Debate

(The prose table is shaded to enhance readability and to stress how Oliver rapidly shifts between segments.)

	TIME	TYPE	SUMMARY OF CONTENT
1	0-0:16	Joke	Oliver begins by introducing the Earth, which we may know as that blue thing Bruce Willis is always trying to save, and so on, before anthropomorphizing it.
2	:17-:31	Information	The Earth's bad news is President Obama's statement and the White House Report that CC is affecting the US now.
3	0:32-50	Joke/Sarcasm	Oliver's comment that Americans "cannot be trusted with the future tense."
4	0:51-1:07	Target/Information	Oliver addresses Gallup polls that indicate that 1/4 Americans don't think climate change is real.
5	1:07-1:28	Joke/Sarcasm	Oliver critiques these polls by saying "you don't need people's opinion on a fact" before providing three ridiculous examples of polls about facts.
6	1:29-1:46	Information	Oliver criticizes the focus on whether CC exists to enforce the mountain of evidence about the climate change problem and the need for CC policy. For evidence, he provides charts of increasing global temperatures, heat waves, melting polar ice caps, and rising sea levels.
7	1:47-1:59	Joke	Oliver says that the only way to accurately report American CC skeptics, is to state that 1/4 Americans are wrong about something.
8	2:00-2:12	Information	There is a presentation (and screenshot) of Cook's paper about the scientific consensus on global warming.

9	2:13-2:44	Target/Evidence	Oliver targets televised climate change debates as exacerbating skepticism: Bill Nye vs. Marsha Blackburn (NBC), Mark Morano (Fox), CNN, CNN, Fox News,
10	2:45-3:04	Refutation/Lead into Final Debate	Oliver comments on the 50/50 division of the screen in these debates, which is “inherently misleading” (2:55) and that there is only one mathematical fair way to represent a climate change debate.
11	3:04	Final Joke/ Visual Analogy	Oliver creates a visual representation of a “fair” climate change debate, which is in shocking contrast to the actual televised debates, to make a point about the irresponsibility of the press and about the reality of scientific consensus. Oliver states this “unwieldy debate” is the only way to have a representative discussion. The climate skeptic is drowned out by “the weight of scientific evidence.”
12	4:20-4:26	Information	Oliver uses his punchline—this debate should never have happened—to reassert the overwhelming scientific consensus once again.

Table 2. Breakdown of John Oliver’s
Paris Agreement

	TIME	TYPE	SUMMARY OF CONTENT
1	0-0:12	Joke	Oliver describes the Earth described as Bjork’s home planet.
2	0:12-0:30	Target	He targets Trump’s June 1, 2017 announcement about pulling out of the Paris Agreement.
3	0:30-0:44	Joke	He makes a joke about the mayor of Paris.
4	0:44-1:14	Information (Statement)	He explains that pulling out of Paris Agreement is a huge problem.
5	1:15-1:37	Information (Expert evidence)	PBS Reports with Dr. Oppenheimer are used as evidence.
6	1:37-1:48	Joke/Pop Culture Reference	There is a comparison/Contrast between this real apocalypse and the fictional one of the film <i>2012</i> .
7	1:49-2:15	Information	Oliver explains parts of the Paris Agreement and the carbon budget, using the source <i>Carbon Brief</i> .

8	2:16-2:25	Joke/Satire	He makes a joke about twenty years not being a long time—using examples of pop culture. He also satirizes that climate change was also discussed 20 years ago.
9	2:26-3:22	Information	Oliver summarizes the Paris Agreement and the landmark signing and celebration.
10	3:23-3:53	Joke	He mocks the shitty gavel used to mark the momentousness of the event.
11	3:54-4:31	Target	Trump explains that the Paris Agreement signatories were celebrating because they were laughing at America. The president's words are the target.
12	4:32-4:50	Rebut/Joke	Oliver says that the Convention was happy for the planet.
13	4:50-5:04	Joke	He notes that there is no climate conspiracy and that the only real conspiracy is the Olsen twins.
14	5:05-5:35	Information	There is a rejection of President Trump's idea that the PA hurts America. He uses an ad from the NYT as evidence.
15	5:36-5:52	Joke (Ad hominem)	The president is mocked for not reading the NYT; Oliver suggests a full-bucket KFC ad instead.
16	5:53-6:21	Target	President Trump's history of climate change skepticism is explained.
17	6:22-6:57	Target	Oliver includes a 36-second segment of the president's speech, in which he appears to be spouting nonsense.
18	6:58-7:27	Joke	Oliver expresses frustration at Trump's inability to complete a thought. His speeches would confuse a goldfish.
19	7:28-7:43	Joke/Rebut	Oliver critiques Trump's climate skepticism as a combination of his lack of attention to detail and his extreme paranoia.
20	7:43-8:06	Target	President Trump claims that China can keep on coaling and India may keep polluting. His fabrication becomes the target.
21	8:06-8:23	Information	The finer points of the PA are explained
22	8:23-8:40	Target	The president's comment that America is most environmentally friendly country in the world.
23	8:41-8:54	Joke/Rebut	Oliver rebuts this point by using a misplaced analogy in which he compares Trump's fabrication to Wahlberg claiming he is the best dentist.
24	8:55-9:05	Information	Oliver explains the Green Climate Fund.
25	9:05-9:28	Target	The president explains that the U.S. has already given 1.0 billion dollars to GF; this is unfair.
26	9:28-10:10	Information	Oliver breaks down President Trump's impressive amount of bullshit, explaining the GCF contributions, the lack of

			enforcement in the PA, and the US promise of 3 billion, not tens of billions.
27	10:10-10:21	Joke	Oliver compares the president's exaggeration to someone saying the leader had tens of failed marriages.
28	10:22-10:42	Target	The president's claim that no one is even close to the US's contributions.
29	10:43-11:03	Refutation/Joke	Oliver makes a ridiculous analogy to stress the falseness of Trump's words.
30	11:04-11:21	Target	Trump's "reassuring tone" about withdrawal is shown.
31	11:21-11:33	Refutation	Oliver explains that the Paris Agreement may not be renegotiated.
32	11:33-11:52	Joke	There is a gaff about Brexit and testing Europe's leaders.
33	11:53-12:25	Information	Oliver explains that each country sets its own goals in the PA, which are voluntary.
34	12:25-12:45	Joke	He notes that the only penalty is shame, which Trump is immune to.
35	12:46-13:16	Information	The substantial harm in leaving the PA is explained, such as damaging the US reputation on the world stage.
36	13:17-13:35	Joke	Oliver is alarmed that the cool Pope just "shit-talked" the USA.
37	13:35-13:52	Information	The real cost of leaving the PA to businesses and for brand America are assessed.
38	13:52-14:02	Joke	Oliver provides silly examples of how a bad association will stick with a brand forever.
39	14:03-14:56	Information	Oliver explains how the government's lack of promotion of renewables harms the economy and contrasts the US's lack of action to China's. He also returns to President Trump's earlier point by noting that China is stopping coal use.
40	14:57-15:01	Joke	The comedian explains that the president is, indeed, fulfilling his campaign promise, but giving jobs to the wrong country.
41	15:01-15:38	Information	More proof of other countries' investment in renewables is provided.
42	15:39-15:58	Joke	There is a very quick and silly interlude.
43	15:59-16:15	Information	The consequences of US leaving are again asserted.
44	16:16-16:40	Information	Oliver makes a final point that consumers must urge businesses to do the right thing.
45	16:41-17:00	Joke	He notes the irony that Philip Morris, Wal-Mart, and Bank of America are NOW the good guys.
46	17:01-17:35	Information	He provides a local example: Bill Peduto's affirmation of the PA
47	17:36-17:48	Joke	Oliver is surprised by Pittsburgh's mayor, whom he thought was a catsup bottle. He jokes that we all are learning something.

48	17:50-18:16	Persuasion	He stresses that everyone must contact local reps.
49	18:16-18:39	Target	He provides an example of climate-change skeptic theory held by a political elite: it's humans and the Earth moving closer to the sun (Scott Wagner).
50	18:40-18:58	Refutation/Joke	Oliver refutes this pseudo-theory.
51	18:59-19:35	Target	He offers another example of a climate-change skeptic theory: the fluctuation of the climate is God's will (Larry Pittman).
52	19:35-19:48	Joke	He jokes that the height of hubris is actually Donald Trump.
53	19:49-20:08	Persuasion	Oliver stresses that viewers and Americans must vote their CC denying reps out of office.
54	20:08-20:29	Info/Critique	Oliver critiques the aloofness of CC representation to set up joke.
55	20:29-20:47	Punchline & Concluding Joke	He ends with suggesting that Americans unite against President Trump, who is a universal symbol of loathing for the CC movement.

Table 3. Types of Visual Elements in the *Paris Agreement* Monologue

TYPE OF VISUAL	COUNT
Fiery Earth/Paris Agreement Graphic	20
Pictures/Screen Shots of President Trump	14
Jokes, Visual Gags (Punchlines)	13
Logos (Company, Organizations), Flags, Maps (Pittsburg, China, India and China, Pennsylvania, North Carolina), Simple Graphics	10
Pop Culture References (positive and negative)	10
Screenshots of Newspaper Articles with blown up quotes	9
Images of other political elites	10
Quotes or Tweets from President Trump	8
Carbon Brief Visual	3
Shots of the signing of the Paris Agreement	3

Table 4. Major Themes on Oliver's *Statistically Representative Debate Board*

STANCE	%
MIXED: Commenters express mixed opinions on the video's content. <i>"I love Oliver but I think we are too far gone."</i>	1.4%
NEGATIVE: Commenters take a negative stance on and/or disapprove of the video's message or technique because they are	26.5%
affirming that global warming is a hoax or a conspiracy, an organized scam to acquire taxes, money, and so on. (This swindle is regularly attributed to Al Gore, the media, and an organized global cohort of scientists and political elites.) <i>"Climate change is a fraud to the people of the earth. YES I am a conspiracy theorist cause I see the bigger picture. This is just another one of their ploys to further their power." (Daniel B)</i>	8.6%
arguing that climate change, which is natural and/or cyclical, is not a problem. (The climate has always been changing and AGW and its effects are highly exaggerated.) <i>"The climate is always changing, and due to the greenhouse-gas effect, emission byproducts from humans have some impact on said changes. Again I simply don't believe that the climate is changing at such an alarming rate that we should be terrified." (DocJerky)</i>	5.3%
critiquing science as fallible, as not functioning by consensus but by open inquiry and skepticism. (Skeptics should also be appreciated rather than mocked) <i>"Damn, I missed the part in science class when we went over how science is a democracy." (Zachary Werrell)</i>	5.3%
rejecting the climate change communication efforts of Oliver and Nye. <i>"I'd rather believe the scientists rather than tv show hosts, politicians or celebrities." (Sugar Cane)</i>	2.8%
debunking the scientific consensus on climate change. <i>"All I need is one person to show me where this 97% consensus was proven. Prove to me that 100% of the world's scientists were polled on whether or not anthropogenic global warming is happening to a disastrous degree. All I could find was that someone called Sarah Green went through over 4000 scientific reports and found that roughly 70% of these selected reports said that we MAY have an affect on the climate." (Juan kingsly)</i>	2.8%
critiquing the flawed methodologies and conclusions of climate science. <i>"Climate models are not science -- especially when they've been wrong for almost 2 decades now. Logic is the key to understanding, and nothing these people are saying lines up with logic and reason." (yaimavol)</i>	1.5%

<p>suggesting other possible causes of climate change.</p> <p><i>“Yes, and there are more cell phones, more microwave ovens, more running shoes, more climate scientists? Why is it CO2?” (Trevor Marr)</i></p>	.2%
<p>defending Republicans.</p> <p><i>“Also republicans don't deny climate change, they deny man made climate change AND its effects. Find me ONE study that clearly demonstrates man made climate effect and its long term effects and I will drill a whole in a tree and make babies with it.” (shock80ey)</i></p>	.2%
POSITIVE: Commenters take a positive stance on and/or approve of the video’s message or technique because they are	37.0%
<p>affirming that the problem of climate change has been well-researched and there is a scientific consensus on its causes.</p> <p><i>“Any good and honest consensus is never 100% but in the scientific sense if 97% of various sciences specialties (geophysics, historical recording, meteorological data researches, atmospherical research and observations, mathematical modelling, etc.) all reach converging conclusions it is pretty close to near perfect consensus.” (Real Lehoux)</i></p>	10.9%
<p>blaming Republicans and special interest groups for generating climate change denial.</p> <p><i>“There’s really only one group of people that think this is bullshit. Don’t pin that on Americans alone. It’s just greedy assholes who manipulate the general public to get what they want. Trump is the complete embodiment of these people and represents their sentiments so perfectly you now see the ugly side we Americans deal with that pretty much was responsible for also the 2008 financial crisis.” (laxjoh)</i></p>	10.7%
<p>offering anecdotal evidence of and/or making future predictions about climate change.</p> <p><i>“in the Netherlands there hasn't been snow for years, then one year it snowed and then another 6 years when it was hotter than it should be around that period. 30 years ago we had snow almost EVERY year!! also the summers here are getting hotter than ever with regular heavy rainfall and thunderstorms. this is all climate change!!” (Neik Nooijens)</i></p>	8.1%
<p>praising Oliver and Nye for and agreeing with their climate change messaging.</p> <p><i>“This piece is frickin beautiful. It’s just unbelievable that a comedy skit has to point out basic reality in our culture. It feels as if about 33% of our country has returned to the scientific and cultural views of the medieval period.” (Stamford Bridge)</i></p>	7.2%
NO CLEAR STANCE: Commenters take no clear stance on the video’s arguments or methods because they are	35.1%

<p>insulting each other or responding to personal attacks.</p> <p><i>“sorry about that as I thought you were another person from this thread that is hassling me, sorry about insulting you” (m beginization)</i></p>	15.9%
<p>discussing other subjects, which may be loosely connected to or disconnected from the video.</p> <p><i>“LOL microchip implants are whack. I don’t want some random chip inside me unless I committed which I have not. Not everyone should have one even if it was for medical reasons.” (AvengerMKII)</i></p>	12.3%
<p>making jokes and/or playing at being the comedian.</p> <p><i>“Bill Nigh and the Overwhelming Scientific Consensus sounds like a great band name. Long, but great.” (Chandler Bing)</i></p> <p><i>“I’ve never seen an owl in person so therefore they aren’t real.” (Alwin Priven)</i></p>	5.0%
<p>debunking (what they perceive as) disinformation or misinformation.</p> <p><i>“I’m coming in late, but I’ve been seeing a lot of people mis-using the term “Appeal to Authority”. An appeal to Authority in itself is a good thing. When an answer is uncertain, it’s a good idea to appeal to those who are experts in related fields. What a lot of people seem to be thinking of is an “Appeal to Authority Fallacy”, which is appealing to an authority who is not actually an authority on that subject. An example: If you were looking to prove a point on, say, the inner workings of a star or other celestial object, and you pointed to someone who is an expert in marine biology, that would be an appeal to authority fallacy, because you’re pointing to someone as proof who has no authority on the discussion at hand. If you appeal to someone who is an authority on the discussion at hand, then you’re doing something right.” (Cellidor)</i></p>	3.3%

Table 5. Major Themes on Oliver’s *Paris Agreement* Board

STANCE	%
<p>MIXED: Commenters express mixed opinions on the video’s content.</p> <p><i>“The World is going to the crapper and life is gonna wither away and die slowly and painfully, but hey, as long as we got John Oliver, we’ll die with smiles on our faces.” (Shashankh Dre)</i></p> <p><i>“It’s true though that we are unlikely to ever do more than slow down climate change and looking at the state of humanity a faster reset might not be a bad thing.” (Kurliston)</i></p>	4%
<p>NEGATIVE: Commenters take a negative stance on and/or disapprove of the video’s message or technique because they are</p>	22.4%
<p>arguing the unfairness of the Paris Agreement to Americans; it is a bad deal that benefits other countries and puts the United States at a disadvantage.</p>	7.6%

<i>"Fuck the Paris agreement. I don't want to pay more in taxes because India and China are going through their industrial revolution. They are the ones that are polluting everything to hell. Why should we give them money?" (Stephen Denino)</i>	
rejecting Oliver's climate change messaging (several reasons). <i>"This guy is a shill, a puppet master if you will. Eat it up kids, now you don't need real news." (Freddy Fox 500)</i>	5.6%
arguing the cyclical nature of climate and the exaggeration of climate change. <i>"It's like they all forgot about the dust bowl...the south/southwest has never recovered." (yamiswife101)</i>	3.7%
defending the president and his decision to withdraw from the Paris Agreement. <i>"That is a form of leadership. A directive (or something) I believe it's called. Look up if you're really interested." (khmm8910)</i> <i>"TRUMP IS THE BEST." (Jake Cassidy)</i>	2.3%
debunking global warming and the science supporting it, which is a hoax. <i>"Awww!,... did your precious money bilking scheme get cancelled? Now who is going to foot the bill for all the euro horseshit it would have funded?!?... (bearing in mind of course this would have done NOTHING to "save the planet", only line the pockets of globalists)" (BlueFalcon!)</i>	2.0%
doubting the science of climate change. <i>"sadly there is no climate science. there is so much going on with our climate and co2. i have more faith that the sun is changing than co2, also antartic ice shelf is back to rates from 70s" (SevSaint)</i>	1.0%
supporting Scott Wagner's climate change theory. <i>"Actually, Scott Wagner is not wrong that the increasing proximity to the Sun is a factor in global warming." (victor GS)</i>	0.3%
POSITIVE: Commenters take a positive stance on and/or approve of the video's message or technique because they are	44.2%
critiquing the president's leadership and decision-making. <i>"He is a despicable human being and a completely incompetent "leader" His term in office will go down in history as the Single Biggest Set Back in American History." (Margo Romero)</i>	20.1%
supporting The Paris Agreement and the U.S.'s participation in it.	7%

<p><i>“years from now people are going to ask.. “where were you when president Trump pulled out of the Paris agreement?”... and we are going to say... “We just stood by and watched” ... Its the end of the world as we know it -R.E.M.” (Alex Hernandez)</i></p>	
<p>blaming Republicans for denying climate change and damaging America.</p> <p><i>“When news came out that my State Governor (Washington) got together with California and New York to create the “U.S. Climate Alliance”, which is basically saying our states will continue to adhere to the Agreement regardless what Trump says, ALL THE CONSERVATIVES, literally ALL of them got on the internet and called it a rebellion and the start of the next civil war, and the National Guard should come and put us down.” (Mik Moen)</i></p>	5.3%
<p>affirming, with evidence, that climate change is happening.</p> <p><i>“I’m really sorry to hear that. Living in northern Germany, we’re not so drastically affected but I miss snow in winter, we don’t have any anymore, and we now have draughts in summer which were pretty unknown until a few years ago. :(“ (Ninchennase)</i></p>	4.6%
<p>praising John Oliver’s stance on the Paris Agreement and/or his work on climate change messaging.</p> <p><i>“Please call out more horrible representatives, its not only amusing, but it helps call the locals as they can get a better understanding of who gets to represent them.”(Hunter Wallish)</i></p> <p><i>“I am a politically aware American, and I approve John Oliver’s message.” (MeanderingWayfarer 092)</i></p>	4.6%
<p>proposing moving away from fossil fuels and seeking alternative forms of energy.</p> <p><i>“Is India doubling their coal production? NO, NO THEY ARE NOT. Neither are we because coal is garbage. Coal KILLS its workers! Why would they oppose transitioning to a safer job that wont kill them and their kids!?” (No Dogma Mama)</i></p>	2.3%
<p>NO CLEAR STANCE/OFF TOPIC: Commenters take no clear stance on the video’s arguments or methods because they are</p>	29.2%
<p>insulting each other and/or responding to personal attacks.</p> <p><i>“A Trumptard who can’t even spell and punctuate? What a surprise!” (ndrthrdr1)</i></p> <p><i>“DELUSIONAL DEM.” (AA BandE)</i></p>	6.6%
<p>making coarse jokes or nonsensical comments.</p> <p><i>“Sen. Wagner reminds me of Ricky from Trailer Park Boys.” (NopeBiscuit)</i></p>	4.6%
<p>discussing other subjects, which may be loosely connected to or disconnected from the topic.</p>	17.8%

<p><i>“Not too surprised you didn't list South Dakota. We must be one of the more old fashioned, backwards thinking state. Definitely a red state that's poor with part of the problem being we allow ourselves to be used by rich people. We have no state income tax, and have sales tax on everything.” (DragoonKnight790)</i></p>	
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Table 6. Major Themes on Kimmel’s *Scientists on Climate Change* Board

STANCE	%
<p>MIXED: Commenters express mixed opinions on the video’s content.</p> <p><i>“why does everyone keep going on and on about climate change? there is almost nothing we can do about it except complain and complain” (no name)</i></p>	3.7%
<p>NEGATIVE: Commenters take a negative stance on and/or disapprove of the video’s message or technique because they are</p>	31.5%
<p>arguing that global warming is a hoax or a conspiracy. (It is an organized swindle to get taxes, money, and so on. This scam is often attributed to Al Gore, the media, and a global cohort of scientists and political elites.)</p> <p><i>“Ever hear of the Ice Age? Climates change over time. And there are some liberals who have admitted to carrying on with the propaganda that blames businesses, in an effort to bring down capitalism.” (Joel C)</i></p>	9.3%
<p>defending climate change as a natural occurrence and/or arguing that its effects are highly exaggerated.</p> <p><i>“Climate change is a joke. Look at the ice age, we weren’t harming the environment then. Maybe we do have some effect, but it's SUPER minimal” (M-)</i></p>	6.1%
<p>rejecting the legitimacy of climate change science and/or the scientific consensus.</p> <p><i>“There is no official field of climate science.”(gtrax 500)</i></p>	4.9%
<p>questioning the authenticity or credibility of celebrities and/or Kimmel.</p> <p><i>“I agree. Anytime Hollywood speaks, I’m very skeptical. In fact anytime I watch the news I’m skeptical. Have a great day.” (Ted Walker)</i></p>	4.0%
<p>offering other reasons for questioning and/or rejecting climate change as well as Kimmel’s message.</p> <p><i>“Scientific fact and facts are not the same thing. I believe we need to be scientific literate, and also be a skeptic about the effects of climate change. Always question date from either side a make your own conclusion.” (David Kimball)</i></p>	2.8%
<p>supporting the oil and gas industry over alternative fuel solutions.</p>	1.8%

<p><i>"Eco hypocrisy is a cancer on responsible human development and evolution! Regulations keep us safe, eco stupidity stunts our economy, growth and opportunity! Working together, the World is our Oilster!" (Trevor Marr)</i></p>	
<p>arguing that science, which is not based on consensus, should welcome skepticism.</p> <p><i>"everything should be open to criticism and re-examination in science. This is a healthy part of science. There are many inconsistencies with past predictions and current mathematical models and whoever is skeptical about it today is painted as an ignorant buffoon. As a scientist myself(immunologist) I can tell you that what you are promoting is not science but unadulterated collectivism." (TY)</i></p>	1.2%
<p>POSITIVE: Commenters take a positive stance on and/or approve of the video's message or technique because they are</p>	33.0%
<p>stressing the reality and the seriousness of climate change.</p> <p><i>"please the Philippines and experience climate change happening real time. this is not and should not be a political issue. I find the claims of This Sarah Palin cringe-worthy and borderline ignorance. Why is this even debated?!" (Lorenze Ibanez)</i></p>	10.1%
<p>praising Jimmy Kimmel for his climate change messaging.</p> <p><i>"what a great public service...thank you jimmy kimmel, you've used your given platform for good purposes :)" (Alwin Retnaraj Soloman)</i></p>	5.8%
<p>accusing Palin and fellow Republicans of promoting climate change denial.</p> <p><i>"and conservative politicians with their bought and paid anti-GCC non-Scientists spout their nonsense to keep the money flowing from their petro-masters." (Tim Morris)</i></p>	8.1%
<p>supporting the scientific consensus on climate change.</p> <p><i>".+Eric Duprey I don't care if the 97% is a perfect number. There is a consensus, and that is undeniable fact." (Kenneth Wong)</i></p>	7.2%
<p>NO CLEAR STANCE: Commenters take no clear stance on the video's arguments or methods because of they are</p>	31.5%
<p>discussing other subjects, which may be loosely connected to or disconnected from the video's content.</p> <p><i>"The Bible? Oh you mean that archaic collection of MYTHS & barbaric FAIRY TALES which condones racism, slavery, beating of slaves, rape, child abuse, stoning "sinners" to death, putting children who curse their father or mother to death, dashing baby to rocks (among other inhuman things) and tells amusing stories about the universe being created for only six days, a talking serpent, a talking donkey, a man parting a sea, men living beyond 500 years, breads falling from heaven, a sea creature drinking a whole river, a dead man coming back to life, a virgin getting pregnant, a man's wife turning into a pillar of salt, and a man living and surviving inside the belly of a whale for a couple of days? LMAO" (TVC15ohoh)</i></p>	16.3%

insulting each other and/or responding to (such as deflecting or apologizing) personal attacks. <i>“Rick TD oh. Apologies. Got you now. Good point. Mistook you for him. My bad. Carry on! (jrneobliviscaris)</i>	13.5%
making jokes related to the video’s content. <i>“Like I’m going to believe that little kid is a scientist.” (Funk Daddy)</i> <i>“I’m not trusting that one guy around a porta potty.” (jacksparrowismydaddy)</i>	1.8%

Table 7. Major Themes on Kimmel’s *Hey Donald Trump* Board

STANCE	%
MIXED: Commenters express mixed opinions on the video’s content. <i>“So is it getting hotter or colder or both? Or neither?” (tyrone shoelaces)</i>	3.5%
NEGATIVE: (Commenters take a negative stance on and/or approve of the video’s message or technique because they are...)	25.6%
critiquing Kimmel’s credibility to comment on President Trump and/or affirm climate change. <i>“Shhh! - Don’t tell Jimmy his show leaves a carbon footprint!” (David Lee Roth)</i> <i>“Your a dumbass! You know absolutely nothing!” (Brandon)</i>	11.2%
asserting that climate change and/or global warming are a lie, hoax, and a scam. <i>“FACT:: global elites created “global warming” to collect a “carbon tax”. PROVE ME WRONG....” (Dendrobial Bright)</i>	7.0%
arguing that the climate is always changing and/or natural and humans may or may not be responsible for climate change. <i>“OMG these guys who think climate change is real. For everyone who believes in it your wrong. The earth runs in a cycle every 5 million years we have an ice age where the earth gets hotter and hotter in the years leading up to it until we have the ice age and then the sun gets blocked out and everything freezes and the cycle starts again. Their is not even 0.1% of Co2 emissions in the air and it has been proven!!!!!! Look it up.” (xXMagicalXx)</i>	3.9%
supporting the president and his decisions. <i>“Donald trump is changing America. In a good way.” (Sal Vulcano)</i>	3.5%
POSITIVE: Commenters take a positive stance on and/or disapprove of the video’s message or technique because they are	35.5%

<p>proclaiming that President Trump is an unfit leader whose stance on climate change is both hypocritical and dangerous.</p> <p><i>“he governs by chaos.” (Watson Everly)</i></p>	14.8%
<p>praising Kimmel for his informative yet humorous climate change messaging.</p> <p><i>“Thank you Jimmy for mentioning climate change. I don’t think it’s getting enough attention in the media.” (aa39545n)</i></p>	13.7%
<p>confirming that climate change is happening and is a serious problem deserving action.</p> <p><i>“It’s so hot in the UK at the moment” (Arnie Rugby123)</i></p> <p><i>“Overall it’s warming up and there are Trillions of Tonnes of Methane about to be released that within decades may send humanity extinct.” (JayJay)</i></p>	7%
<p>NO CLEAR STANCE/OFF TOPIC: Commenters take no clear stance on the video’s arguments or methods because they are</p>	35.2%
<p>discussing other subjects, which may be loosely connected to or disconnected from the topic.</p> <p><i>“Only criminals violate rights to free speech, YOUTUBE...” (Dendrobial Bright)</i></p> <p><i>“Animal agriculture IS the problem.” (Nattalie McShan)</i></p>	17.2%
<p>insulting each other and/or responding to personal attacks.</p> <p><i>“And that’s how you get Sexually Transmitted Deranged Trump Syndrome.” (Yola Montalvan)</i></p> <p><i>“It must suck to be a republican blaming others for your problems.” (Andy Aguilar)</i></p>	13.3%
<p>making coarse jokes or writing nonsensical comments.</p> <p><i>“I just came for the two models standing by that old fart...” (Rd. Alexander)</i></p> <p><i>“We’re missing the point; we think the heat waves are due to climate change when in fact we’re slowly being sent to HELL!!!” (Night Jazz)</i></p>	4.7%

Table 8. Most Upvoted Comments from *Statistically Representative Climate Change Debate*

RANK	USER ID	COMMENT	LIKES	REPLIES
#1	Sabrina McClain	Of course Bill Nye is the go-to climate change defender, he's used to explaining science to children	3041	25
#2	Sultans Of Zing	Owls are a hoax perpetuated by North Korean Communists and American Liberals to destroy our 2nd Amendment rights.	3006	36
#3	TheAndrewj96	My whole family, and all our friends, think global warming doesn't exist. My Dad says it's just "coffee shop speculation." I can't believe I live in the same house with these people.	2555	133
#4	Matthew Geiberras	This is what I hate about the left wing. Their facts are backed up with credible data and they are generally educated.	1991	96
#5	Tristan Neal	"I can't hear you over the weight of scientific evidence" XD XD XD	1915	28
#6	Han - nah	Is there an option where I can give John Oliver 96 more thumbs up?	1830	16
#7	Jonathan Song	The main argument against global warming is "well if the earth is getting hotter then why does it still snow" and hearing that makes me want to torture them medieval style	1819	108
#8	BlackSh1rtandJeans	Between evolution, vaccines and climate change, it's kind of obvious that America does not seem to give a shit anymore.	1649	25
#9	Tesslyn Francis	While Americans argue about whether or not climate change exists, we here in Africa are already feeling the effects of it. Did you guys know that it hasn't rained properly in Zimbabwe since 2014? You cannot even begin to imagine how desperate the situation is there. Whether you believe global warming is happening or not, it won't kill you to slow your roll with your energy consumption.	1588	129

#10	Chris Wallace	So when we inevitably move to Mars, we aren't inviting the Americans right?	943	107
#11	Barda Wulf	<p>Let's make this very simple for the simple-minded deniers out there.</p> <p>Regardless of your climate change "beliefs", would less pollution of any kind be a terrible thing? Don't you want clean air, water and food for yourself and your family? Do you want your children consuming the eighty thousand plus UNREGULATED chemicals out there or breathing in cancerous toxins? Wouldn't an ounce of prevention be worth more than a pound of cure?</p>	923	41
#12	RainbowYak	<p>What should also be said is that most Americans are not aware of the fact that the US is literally the only country in the world where people still "doubt" climate change. Everywhere else, people know it's a fact. Have you ever thought it funny how the Vatican didn't officially believe that the sun is the center of the universe until 1991? In the same way you laugh about that, we laugh about all those ignorant American conspiracy theorists here in Europe. But frankly, we only laugh with one eye while the other is crying. Unfortunately, the US is not some small island state but by far the biggest per capita polluter in the world. Basically, we all have to suffer because some people just don't get it. I wouldn't be surprised if even North Koreans had a more informed view about climate change. America is the only country where an incredibly bad education system is paired with a crazily wasteful consumerist society, lots of trashy news channels and a silly government paranoia.</p>	846	66
#13	njintau	Fuck yeah Bill Nye! He's the reason I became interested in science as a kid and why I have two master's degrees in scientific fields! :D	839	51
#14	Count Orlok	5 is bigger, owls don't exist, and there are not hats.	628	16
#15	Baz Kouba	"I can't hear you over the weight of scientific evidence."	615	25

Table 9. Most Upvoted Comments from *Paris Agreement*

RANK	USER ID	COMMENT	LIKES	REPLIES
#1	Mintger	you know that that the shit gets real, when the french president speaks English	2416	38
#2	fidorover	Per usual, Trump did the exact opposite of what he should've done. He pulled out of something that could actually save the planet, but 34 years earlier he didn't pull out and we got Eric.	1690	47
#3	Taylor Adams	"I was elected to LEAD not READ"	1879	24
#4	Kanu Jaswal	if only his dad had pulled out that night	1705	29
#5	DannyBoy	I just think Trump looked at the name of the agreement, saw that it didn't say AMERICA, and decided to withdraw on those merits.	1703	22
#6	School jobs	It's never about the agreement it's just about erasing all of Obama's accomplishments... that's all everything they're doing is about..	1653	58
#7	Maximus0451	Republican or Democrat, I think we should all agree to not fuck up the place we live in.	1408	42
#8	Gustaf Larsson	The fact that Donald Trump makes George Bush Jr. look like fucking Stephen Hawking by comparison is so god damn depressing.	1272	13
#9	generic name	I used to find these hilarious but now it just depresses the hell out of me.	1263	11
#10	Evan Fields	Doesn't Trump know that pulling out is not an effective form of Earth control?	1257	14
#11	A Fidget Spinner	Last time I was this early, the Earth had a chance.	1202	15
#12	Fluxquark	Let's not call them "climate sceptics" because being sceptic means that you require evidence to believe assertions. They should be called "reality deniers" because the evidence has been in for a long time.	1178	48
#13	T Wong	Definition of Stupid:	1165	50

		Knowing the truth, Seeing the truth, But still believing in lies!!		
#14	HD Film Tributes	Is there a clause anywhere in the US Constitution where a president can be removed for being mentally unstable?	1129	60
#15	Riley Schroeder	People of the world, please know that a large number of Americans, including myself, oppose Trump's idiotic decisions and do not feel at all represented by him.	1127	73
#16	ST	A 2 degree rise means cocoa farming would become unsustainable, coffee would not grow and wheat would be severely restricted. So no more chocolate, coffee or beer. Heat waves, droughts, submergence of islands and coastal cities like New York are other climatic effects.	1120	40
#17	Terika Tora	Quick! Rename it the "Trump Agreement", and he might actually pay attention to it!	1094	17
#18	Geny FEAR	Louis C.K. Had a great joke about taking care of the planet, basically saying; "you think a God gave you this world? Why the fuck do you think you don't have to take care of it?"	1072	19
#19	Jennifer Bullet	I have never seen a more unstable person in my life. he pull out because Obama signed it. Just like he is trying to get rid/ undo everything Obama did over the last 8 years.	1053	40
#20	Axis1247	John John John, For Trump to finish a thought he would've had to have one in the first place	1038	12

Table 10. Most Upvoted Comments from *Scientists on Climate Change*

RANK	USER ID	COMMENT	LIKES	REPLIES
#1	Angry Kittens	What's weirder is that Republicans claim that scientists are doing it for the money. Funny thing is I've never seen a rich scientist, especially pure academic researchers (i.e. NOT corporate). Most I know are penny pinching the tiny grants they have just to continue their studies while living an absolutely average life teaching at a school. My dad is one.	544	142

		<p>There are plenty of filthy rich politicians sucking the oil teat though. Sarah Palin alone was worth \$12 million dollars in 2011, and during her time as a governor, 1 in 4 of all appointees were from the highest campaign donors. Including sweet state development deals for corporations. And now that she's not running for anything, she can happily demand even more money for these appearances.</p> <p>Ka-ching.</p>		
#2	bobbycone2	<p>I'm Republican but Sarah Palin is an idiot! Global climate change is a big problem! And we are causing a lot of it.</p>	414	127
#3	Martin Evans	<p>There is a cult of ignorance in the United States, and there has always been. The strain of anti-intellectualism has been a constant thread winding its way through our political and cultural life, nurtured by the false notion that democracy means that "my ignorance" is just as good as your knowledge.-Issac Asimov</p>	409	67
#4	DeusEx Astra	<p>97% of scientists... or Sarah Palin. Hmm, who to believe? Such a difficult decision, it really is.</p>	300	155
#5	Tea Tard	<p>Ignorant clowns like Palin are a threat to the planet and the security of the US. They are a disgrace and should be ridiculed as such.</p>	285	54
#6	zack villa	<p>Republicans are a national embarrassment.</p>	240	31
#7	For the love of life	<p>and she was almost our vice president :\</p>	210	42
#8	Darknewt	<p>#stillsanders</p>	208	20
#9	ioan pena	<p>Only in the US climate change is a debate ...</p>	198	30
#10	3lement2010	<p>The people disliking are going to be the first to drown from rising sea levels.</p>	190	45
#11	RetirementNoir: ATaleOfPruneJuiceAndMurder	<p>It makes me sad that we still have to acknowledge morons about science facts because they're rich or people who have power. You'd think a democracy would be set up so that the ignorant aren't in charge...</p>	136	63

#12	cc22ful	One of the main reasons I like Jimmy, is that he actually cares about things. Especially these days, when no one seems to care anymore, about anything.	131	19
#13	franco libertini	has anyone ever tested Sarah Palin's mental health?	127	15
#14	Dane Potmo	Reasoning with American Conservatives is like reasoning with ISIS. These are the people that spent 7 years losing their mind over Obama being ineligible to be president for being born in Kenya (which isn't even true, he was clearly born in Hawaii), and then turns around and is completely silent about Ted Cruz, inarguably, being born in Canada to a Cuban father. These are the same people who deny humans evolved from lower primates, who think the earth is 6,500 years old, that Adam and Eve were not only real, but owned pet dinosaurs. How do you reason with a population segment that psychologically deranged.	102	40
#15	katna17	I'm a republican, but why does Hillary have so many supporters? I feel like Bernie would be better for the Democratic Party.	97	24
#16	Marc Driftmeyer	So far we have 1,150 dumb motherfuckers.	90	34
#17	M A T T V I B E S	I see what you're doing Jimmy... #FeelTheBern #Bernie2016	86	10
#18	Jitraon Tiachunpun	We live in a time when comedians speak the truth and politicians tell jokes.	75	13
#19	Dovahkiff	Too many dumbass Republicans in office.	73	9
#20	justin	I blame the media for climate change deniers. Every major news channel has had some sort of debate concerning climate change. This can lead the ignorant to think: "Hey, they're having debates, and if it's up for debate, then it must not be set in stone!" The problem with that is: It's not up for debate. It's a FACT. It is impossible to debate facts because it's science and it's happening now!	64	24

		If you believe that 97% of scientists are incorrect, then you have some problems of yourself to deal with.		
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Table 11. Most Upvoted Comments from *Hey Donald Trump*

RANK	USER ID	COMMENT	LIKES	REPLIES
#1	Sabrina Zanoletti	Lmao what im I doing here im not even American	530	51
#2	Auriam	Of course the global warming has accelerated since Trump became president. The amount of bullshit spewing out of his mouth is releasing quite a bit of methane.	474	25
#3	Brilliant	He won't be alive by 2050 and therefore he doesn't care	354	23
#4	Gamer4life	Trump is a JOKE!!	260	32
#5	D W	By 2050? Trump doesn't care what happens to the planet AFTER he's gone... much less golf courses, properties, or his own children. (hashtagSad)	177	7
#6	Priscilla Jimenez	Jimmy, send this over to John Oliver and he'll have it played on the Fox channel so trump can see it	117	5
#7	crazy 556 gamer	I literally LOVE JIMMY!!!!!!!!!!!!!!	114	5
#8	New Message	"He lives in this world too..." Pretty sure he lives in his own world.	91	6
#9	Conflict of incest	Jimmy we love your show Our best regards from Canada!	88	11
#10	Deep Ashtray	Might be a bit too technical for the President. Next time try a cartoon.	83	10
#11	Happy Accidents	No one cares if you're first	54	23
#12	Jamal Productions	IM from swden and i really don't care that much about USA but how can All these shitty late night shows makes fun of Trump and somehow make it top #5 trending every week	50	33
#13	DJM Engelhard	Problem of old people in office: they don't love their kids enough to make a big change for the climate.		7

Table 12. Longest Conversations from *CC Debate*

RANK	USER ID	COMMENT	REPLIES	LIKES
#1	Equs Narnd	Deconstructing the 97%... http://judithcurry.com/2013/07/26/the-97-consensus/	239	17
#2	ExperienceCounts2	<p>I've posted these in other threads, but it seems the anti-science wackos just run from thread to thread making the same claims no matter how many times they're called on bullshit. So, for those who want to have fun, here is my list of questions to ask anti-science wackos when they deny the reality of human caused global warming:</p> <p>. What specific evidence would climate scientists have to produce to convince you that human caused GHGs are a significant contributor to the current global warming?</p> <p>. Do you believe there is a difference between long-term trend and variability?</p> <p>. Name the title of one published paper that was corrected or retracted as a result of "Climategate"</p> <p>. Why haven't any scientific papers been challenged for manipulation or fraud by Heartland, Watts, Singer, Inhofe, Curry, Spencer, Bastardi, Morono or any of the other deniers?</p> <p>. Name the title or author of one climate science paper that was rejected by a reputable journal because it contradicted the theory that human caused GHGs are a significant contributor to the current global warming.</p> <p>. After all the screaming about not having access to climate data (i.e. the "hide the decline" data that wasn't licensed for redistribution), why has nothing been done by the "skeptics" since it was made available to them?</p> <p>. Name the published science paper(s) that used the "hide the decline" source code in their analysis</p>	229	141

		<p>. Why is it permissible for UAH to alter climate data before publication without any outcry at all, but similar alterations are not permissible for anyone else?</p> <p>. If the climate science data is being faked/altered, then why do anti-science wackos cherry pick the climate science data to try to “prove” there is a global conspiracy?</p> <p>. Every national academy of science on planet Earth (I believe there are 22 of them) has published a statement agreeing that human produced GHG emissions is the most likely explanation for current warming. How did they all arrive at the wrong answer?</p> <p>. Why does the profit motive only affect climate science? Why doesn’t it affect condensed matter physics, or ag science or geophysics?</p> <p>. Why doesn’t the profit and personal gain motive affect sensationalist media websites like Watts, Singer, Inhofe, Spencer etc. the same way it supposedly affects climate science</p> <p>I’ve been asking some of those questions for going on 9 years now. I’ve never once gotten a direct answer to any of them. You won’t either, but sometimes it’s fun to watch the bastards squirm when they can’t even answer simple questions honestly.</p>		
#3	Fernando Dobbin	I don’t live in the US so I must ask: Are there really that many people who denies global warming?	141	229
#4	TheAndrewj96	<p>My whole family, and all our friends, think global warming doesn’t exist. My Dad says it’s just “coffee shop speculation.”</p> <p>I can’t believe I live in the same house with these people.</p>	133	2555
#5	Tesslyn Francis	While Americans argue about whether or not climate change exists, we here in Africa are already feeling the effects of it. Did you guys know that it hasn’t rained	129	1588

		properly in Zimbabwe since 2014? You cannot even begin to imagine how desperate the situation is there. Whether you believe global warming is happening or not, it won't kill you to slow your roll with your energy consumption.		
#6	FireofOne	some people are retarded, the earth environment for us is not going to last. we need to start developing deep space spaceships. need to find a new home someday and that day will be upon us faster than we think.	128	116
#7	Plato Smith	If 97.1% of economists take one side, you will believe it. If 97.1% of doctors take on side, you will believe them. If 97.1% of engineers take once side, you will believe them. Why the fuck are you saying "Just because the majority believe doesn't make it true" about climatologists, geologists, and the other fields that contributed evidence to climate change? Scientists know that facts aren't a democracy, they agree because they personally analyzed the evidence themselves.	127	523
#8	Peter Watson	Its no coincidence that the climate change "skeptics" are also the religious nuts. These guys have been denying science (evidence, facts) since birth!	126	142
#9	RideMyTruck	Uh, Global Warming is a COSMOLOGICAL phenomenon. It is NOT man made. The following articles are from Nature Magazine, MIT news, Harvard Science and National Geographic respectively. They have all been silenced by the mainstream media and junk scientists worldwide. 1)google search : "Prediction of a global climate change on Jupiter" 2)google search: "Pluto is undergoing global warming, researchers find" 3)google search : "Is the solar system entering a nearby interstellar cloud?" 4)google search : "Mars Melt Hints at Solar"	117	15
#10	Jonathan Song	The main argument against global warming is "well if the earth is getting hotter then why does it still snow" and	108	1819

		hearing that makes me want to torture them medieval style		
#11	Chris Wallace	So when we inevitably move to Mars, we aren't inviting the Americans right?	107	943
#12	Matthew Geiberras	This is what I hate about the left wing. Their facts are backed up with credible data and they are generally educated.	96	1991
#13	Christian Rioux	<p>So much anti-science bullshit.</p> <p>-There is no warming since over 18 years (while CO2 has risen)</p> <p>-“97% of scientist” is a manipulated poll, where they selected 75 people among 3000</p> <p>-Bill Nye is an actor and entertainer, not a scientist, and he has no credentials on climate</p> <p>-“Science is settled” is not science. Science is based on fact, not opinion pools. Consensus is a politic thing</p> <p>-During the last 8000 years (since the end of the last ice age) there were at least 5 periods that were warmer than today</p> <p>-We actually live in a COLD and CO2 POOR era. Since 500 millions years, temperature have been warmer most of the time, and CO2 levels were 5 times higher than today on average.</p> <p>-The “warming” that they always show is always starting at 1880. This is the only way they can show “warming” because 1880 was at the end of “little Ice Age”, one of the coldest periods since the last ice age. It's NORMAL that is has warmed a bit since then,</p> <p>-The actual global sea ice is above average, arctic ice is in progression, and antarctic ice is beating ice cover records for 3 years in a row.</p> <p>Humans don't affect the climate, solar cycles do. Get over it. It's a political scam to get your money and control you.</p>	92	6

#14	Nicole E	Remember when scientists were certain the earth was flat and people believed them? They were wrong. Just saying.	84	2
#15	Robert Shepherd	Everyone. This is an old figure. There was a survey with 2,400 papers instead of 1,000 and the percent saying man made climate change is happening jumped up from 97.1% to 99.1%	79	374

Table 13. Longest Conversations from *Paris Agreement*

RANK	USER ID	COMMENT	REPLIES	LIKES
#1	Riley Schroeder	People of the world, please know that a large number of Americans, including myself, oppose Trump's idiotic decisions and do not feel at all represented by him.	73	1127
#2	Michael Isinger	This was the moment that the US dropped the title of leader of the world. EU & China will take that mantle over the next decade.	65	966
#3	HD Film Tributes	Is there a clause anywhere in the US Constitution where a president can be removed for being mentally unstable?	60	1129
#4	schooljobs	It's never about the agreement it's just about erasing all of Obama's accomplishments... that's all everything they're doing is about..	58	1653
#5	Donald Aguirre	I'm 33 years old. I'll be 53 in 20 years. I've seriously considered if I should even have kids based off where the planet is headed. Fuck. *Some of the comments have been really thoughtful, and some of the comments have had a level of hostility I don't even understand.	57	841
#6	John Stones	Why are Republicans so stupid when it comes to climate change? Don't US schools teach Environmental education?	56	444
#7	Elijah Hansen-Lints	Honestly, why do people hate on globalism so much? Why is it so hard to understand that AMERICA won't prosper if we don't keep working on climate change?	54	575

#8	Why you gotta go there	<p>Hey question. When will trump be evil?</p> <ul style="list-style-type: none"> - Has said “We need to take out their families” which is only terrorism when a Muslim says it. So okay that doesn't make him evil - He Ordered a raid that took the life of 30 innocent people in Yemen including an 8year old girl. Fine that doesn’t make him evil. - Over 1000 innocent people died just last month because of trumps 400% increase in Drone attacks. Fine that doesn’t make him evil. - Has empowered people that have taken lives of Hindus and Muslims. Fine that doesn’t make him evil. - Has in the past prevented American citizens from entering America because of their religious fate. Fine that doesn’t make him evil. - Has taken America out of the Paris Climate agreement Fine that doesn't make him evil still. <p>So what will it take?</p>	52	556
#9	T Wong	<p>“Definition of Stupid:</p> <p>Knowing the truth, Seeing the truth, But still believing in lies!!”</p>	50	1165
#10	Fluxquark	<p>Let’s not call them “climate sceptics” because being sceptic means that you require evidence to believe assertions. They should be called “reality deniers” because the evidence has been in for a long time.</p>	48	1178
#11	50 Dollars	<p>John, should’ve mentioned the individual actions we can take. As an American i can safely say that a lot of us aren’t taking action. We can’t just expect the government to do all the work for us. I have neighbors who eat 3 prime ribs steaks a day, lounge under the air con 24/7 and drive a car to visit their neighbors 1 f*cking block away.(not shaming meat eaters btw, eating meat isn't a bad thing, but at the same time there should be a reasonable amount of intake for it) All people know how to do nowadays is blame their government. We’re as responsible as they are. And now more than ever, with an</p>	48	760

		idiot in office, we need to sacrifice some of our own pleasures for the greater good.		
#12	fidorover	<p>Per usual, Trump did the exact opposite of what he should've done.</p> <p>He pulled out of something that could actually save the planet, but 34 years earlier he didn't pull out and we got Eric.</p>	47	1960
#13	suicune690	<p>America seriously needs to cut down on:</p> <ol style="list-style-type: none"> 1. Red meat. 2. Air conditioning. 3. Giant cars containing a single person." 	47	866
#14	ArachCobra	Why the fuck does Trump care so much about the fucking coal? Coal is on the way out. China is getting rid of it, as is everyone else. It's not going to help the American economy to have mountains of coal lying around with nobody to sell it to.	47	648
#15	aman mishra	love from india to every citizen of this earth. lets work together	47	459
#16	Ryan Petley	Donald Trump has lied more than any other politician in history. Serious question, how has he possibly not been prosecuted for his very obvious lying to the American Public? He lies on what seems like a daily basis and it has real effects.	45	879
#17	Louise James	I'm from this mythical place called Denmark; we're a small country and are all-in-all pretty damn insignificant on a global scale (despite our politicians believing otherwise) but we do pull our weight. I don't care about the US making more money than us... I simply want the United States of America to pull their weight in this climate debacle. It isn't about money - nor should it be about money. It is about ensuring a future for our planet and the generations to come. It is a far bigger hubris to believe you, the politicians of the US, have the right to doom the world by not participating in the fight to save it.	44	614
#18	uWu	What can we do right now ? GO VEGAN ! Put your \$ where your mouth is, if you	44	21

		want to save the planet, go vegan, regardless of what your tastebuds want.		
#19	Maximus0451	Republican or Democrat, I think we should all agree to not fuck up the place we live in.	42	1408
#20	sidd joshi	Dear America, what's the point of having world's top universities(Harvard, MIT, Caltech etc.), when you can't convince your own people (those who voted for this đŸ'© & others) that climate change is Real and an URGENT issue.	42	982

Table 14. Longest Conversations from *Scientists on Climate Change*

RANK	USER ID	COMMENT	REPLIES	LIKES
#1	DeusExAstra	97% of scientists. . . or Sarah Palin. Hmm, who to believe? Such a difficult decision, it really is.	155	300
#2	Angry Kittens	<p>What's weirder is that Republicans claim that scientists are doing it for the money. Funny thing is I've never seen a rich scientist, especially pure academic researchers (i.e. NOT corporate). Most I know are penny pinching the tiny grants they have just to continue their studies while living an absolutely average life teaching at a school. My dad is one.</p> <p>There are plenty of filthy rich politicians sucking the oil teat though. Sarah Palin alone was worth \$12 million dollars in 2011, and during her time as a governor, 1 in 4 of all appointees were from the highest campaign donors. Including sweet state development deals for corporations. And now that she's not running for anything, she can happily demand even more money for these appearances.</p> <p>Ka-ching.</p>	142	544
#3	Martin Evans	There is a cult of ignorance in the United States, and there has always been. The strain of anti-intellectualism has been a constant thread winding its way through our political and cultural life, nurtured by	67	409

		the false notion that democracy means that “my ignorance” is just as good as your knowledge. Isaac Asimov		
#4	RetirementNoir: ATaleOfPruneJuiceAndMurder	It makes me sad that we still have to acknowledge morons about science facts because they’re rich or people who have power. You’d think a democracy would be set up so that the ignorant aren’t in charge...	63	136
#5	mizuhonova	Wow, Jimmy Kimmel actually did a serious segment	56	43
#6	Tea Tard	Ignorant clowns like Palin are a threat to the planet and the security of the US. They are a disgrace and should be ridiculed as such.	54	285
#7	Android Miller	Okay Jimmy calm down...you’re a talk show host not a political pundit. We all know you’re a liberal just like every other celebrity in America.	52	15
#8	3lement2010	The people disliking are going to be the first to drown from rising sea levels.	45	190
#9	For the love of life	and she was almost our vice president :\	42	210
#10	TVC15ohoh	Palin suffers from the Dunning-Kruger Effect. “A cognitive bias in which relatively unskilled persons suffer illusory superiority, mistakenly assessing their ability to be much higher than it really is. Dunning and Kruger attributed this bias to a metacognitive inability of the unskilled to recognize their own ineptitude and evaluate their own ability accurately.”	40	6

Table 15. Longest Conversations from *Hey Donald Trump*

RANK	USER ID	COMMENT	REPLIES	LIKES
#1	Sabrina Zanoletti	Lmao what im I doing here im not even American	51	530
#2	Jamal Productions	“IM from swden and i really don’t care that much about USA but how can All these shitty late night shows makes fun of Trump and somehow make it top #5 trending every week	33	50
#3	Gamer4life	Trump is a JOKE!!	32	260

#4	Aurium	Of course the global warming has accelerated since Trump became president. The amount of bullshit spewing out of his mouth is releasing quite a bit of methane	25	474
#5	Brilliant	He won't be alive by 2050 and therefore he doesn't care	23	354
#6	Happy Accidents	No one cares if you're first	23	54
#7	Sir Winston Lemon	Remember when Al Gore said in 2008 that the world will end in 2015. Another HOAX!"	17	12
#8	MaxwellRevire sco	Climate change, floods, drought, world altering fire, ice ages and melt downs have all happened many times through history. So the question isn't weather climate change is real, unless you know nothing of climate history. It's how much of it inflated by humans. It's not the orange guys fault, lol. I doubt Jimmy is boycotting beef (larger polluters than cars last I checked) or boycotting flying in jets (both assumptions though). But you know, Jimmy is a warm hearted guy with little knowledge on the subject. So I guess you can't blame him.	16	14
#9	Jeremiah	Ok not trying to get too political here, but these public figures such as jimmy don't have any room to talk. They'll never follow their own preachings	15	7
#10	Sal Vulcano	Donald trump is changing America. In a good way	12	10