Jan 1st, 12:00 AM

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Perceptions of Problematic Credibility in John Oliver's "Statistically Representative Climate Change Debate"

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ABSTRACT: Satirical television programs have been praised as valuable sources of news as well as science information, such as stories on anthropogenic global warming. This paper analyzes a population of comments from the YouTube comment board for John Oliver's 2014 "Statistically Representative Climate Change Debate" to gauge how resistant audiences engage with Oliver's argument and assess his and Bill Nye's ethos. The conclusion offers suggestions about how, when broaching the subject of climate change, satirical comedians and science communicators, in general, may better reach oppositional audiences.

1. JOHN OLIVER DOES SATIRICAL CLIMATE CHANGE COMMUNICATION

Satire Television—previously known as new political television (Jones & Baym, 2010)—that genre of programming combining entertainment, news, and politics, is well known for criticizing the spin of mainstream journalism and for covering stories omitted by or downplayed in traditional news programs, such as foreign policy issues (Baumgartner, 2011; Zinser, 2007. More recently, this genre has also been praised for the depth of its science coverage. *The Colbert Report* and *The Daily Show*, for example, have been found to cover more science stories than the mainstream news (Brewer & McKnight, 2015) as well as regularly featuring celebrity scientist guests, such as Neil Degrasse Tyson. Compared to mainstream news programs, satire television may more responsibly represent scientific problems and debates, disarticulating them from falsehoods and uncertainty while directing viewers' attention to science and to the environment (Feldman, Leiserowitz, & Maibach, 2011). Because these programs package information in a non-threatening, entertaining way, they may act as a "low cost intellectual gateway" for greater engagement in science and the environment when the TV is turned off (Brewer & McKnight, 2015). More recently, satirical television programs have amped up their coverage of anthropogenic global warming. One of their major targets has been the inaccurate climate change information propagated by more conservative news outlets, such as Fox News, and its associated and very vocal pundits.

  Such is the case with the segment analyzed in this paper: John Oliver's May 11, 2014 segment from HBO's *Last Week Tonight*, "A Statistically Representative Climate Change Debate," featuring celebrity scientist Bill Nye, "the science guy." In this segment, Oliver responds to a particular *kairos*, or specific occasion or moment in time: the ongoing political polarization on the seriousness of and policies for acting on global warming, a plethora of polls revealing continuing American skepticism about anthropogenic global warming (AGW) (Pew,

2014), and, most of all, the lack of attention given to Cook, Nuccitelli, Green, Richardson, Winkler, Painting, Way, Jacobs, & Skuce's (2013) bibliometric study on the scientific consensus on AGW. In this study, the authors found that over 97% of those taking a position on AGW attributed to it to human causes. By the time Oliver's segment aired, this article had been downloaded more than 200,000 times, making it among the most recognized scientific studies of 2013 (Vaidyanathan, 2014), but it still received scant coverage in the mainstream media and, of course, the usual mockery in Fox news programs.

And similar to Cook et al.'s bibliometric study, Oliver's "A Statistically Representative Climate Change Debate" video is *still* drawing a combination of ire and praise. Despite being uploaded to YouTube in 2014, this segment steadily averages about 40,000 viewers a month, and now has over 7.85 million views. Below is a snapshot of the ongoing engagement with this video:

- Sept 27, 2017: 7 500 000 views, 7206 comments, 16 892 Facebook shares
- Dec. 20, 2017: 7 607 938 views, 8286 comments, 17 357 Facebook shares
- June 20, 2018: 7 853 610 views, 8678 comments, 18 069 Facebook shares

In the segment, Oliver responds to the current environmental crisis with his usual exasperated humor. After introducing the Earth as that "big blue thing Bruce Willis is always trying to save," he pinpoints several satirical targets in the current historical moment: President Obama, for his delayed announcement about the seriousness of AGW; the American people, for repeatedly disregarding climate science evidence; and the media, for both its repetitive coverage of climate change polls as well as its bland reporting of climate change effects, which usually involves the stock footage of "the obligatory picture of a polar bear balancing on a block of ice." But Oliver aims his sharpest arrow at the media's irresponsible airing of debates between Bill Nye and uninformed climate change skeptics.

These debates represent the flaw of false balance: the logical fallacy often resulting from the typical journalistic routine of airing different perspectives on a story. In this flaw, equal attention is given to both sides of an argument, even if one side is disreputable and not backed by legitimate evidence; Boykoff and Boykoff (2004) refer to this scenario as "balance as bias." By giving credibility to maverick scientists (Dearing, 1995) and to doubters without expertise, this flaw may result in Americans thinking that climate science is still unsettled and contribute to the "manufactured scientific controversy" (Ceccarelli, 2011) of the climate change debate. According to Huertas and Adler (2012), false balance is regularly exploited by Fox News in its climate change coverage along with cherry-picking evidence, disparaging climate science, and making *ad-hominem* attacks against scientists. In his segment, a perturbed Oliver addresses the false balance fallacy by stressing the legitimacy of Cook et al.'s study and by ending his rant with a striking visual metaphor: a "statistically representative" climate change debate in which three deniers are drowned out by Bill Nye and 96 other lab-coat wearing "scientists," who represent the "overwhelming weight of scientific consensus."

2. BUT IS JOHN OLIVER CREDIBLE? CONSIDERING HIS ETHOS

As informative as this segment is, Oliver's approach and satirical targets might be resisted by certain viewers because of their political beliefs and/or interpretation of his satire. In the writer's experience, this episode sparked significant negative feedback from more conservative

students when it was used to teach logical fallacies. During class, students were asked to analyze how Oliver deconstructed logical flaws and effectively used visual rhetoric, but, instead, they focused on criticizing Oliver's credibility and his own abuse of logic, particularly his closing metaphor for consensus, which they found problematic. In light of this reaction, this researcher set out to discover the following: a) how other resistant audiences perceive Oliver's argumentative strategies along with his credibility and trustworthiness; and b) how these assessments affect their interpretation of global warming as a serious problem.

In the current era of fighting false facts with true facts, ethos may seem irrelevant. But according to Longaker and Walker (2011), Aristotle, Isocrates, and Cicero all placed ethos in a privileged position. Of the three appeals—logos, argument by logic and evidence; pathos, argument by appeal; and ethos, argument by character—they considered ethos the most important rhetorical appeal in connecting with and then persuading audiences. In ethos, the speaker employs their personality, reputation, and abilities to *appear* credible; that is, the emphasis is not on the speaker having a trustworthy character, but on the strong public performance of it. In particular, there are three essential qualities of persuasive ethos: virtue, or building a bridge to the reader's values; practical wisdom or virtue, or knowing how to do the right thing at the right time; and disinterest, or appearing to have a lack of bias and putting the audience's needs ahead of your own. In ethos, a speaker must also fit with the audience's expectations; ethos, then, is not a stable quality, but one that must be earned and one that may also be lost. The modern rhetorical theorist Kenneth Burke would further refine ethos, but focus more on persuasion as identification. For Burke (1969), what is most significant is an audience's identification with a rhetor (p. 21); that is, the audience must see their needs and values replicated by/in rhetors in order to connect with them, even though, in reality, this identification is never entirely possible or complete. However, in order to identify with a character or community, a person has to separate himself from yet another character and community. This identification and division is particularly problematic with satirical discourse, which tends to aggregate communities around those who get the joke and those who are its unfortunate target (Hutcheon, 1994). That is, satire is a problematic genre that both bonds and alienates.

In order to follow up on my students' negative feedback, the following research question was posed:

> What does an analysis of the reception of John Oliver's 2014 "Statistically Representative Climate Change Debate" reveal about how resistant audiences engage in and assess John Oliver's argumentative strategies as well as perceive his credibility?

The YouTube comment board was chosen as a place to gauge audience reception. Although 1.1 million HBO viewers originally watched Oliver's episode, seven times that population have viewed the video on YouTube, making Oliver's post-television audience significant and worthy of being analyzed.

3. METHOD: TAKING THE TIME TO READ THE COMMENTS

3.1 The YouTube Comment Board as (Problematic) Public Sphere

Both studying YouTube comments and making arguments for their worth as online data are challenging. The internet's first promoters saw early online forums, such as UseNet groups, as

combining "the ideal of participatory democracy of the Greek agora and the Colonial New England town meeting" (Poster, 1990, p. 123). In other words, the internet was perceived as offering virtual discussion spaces that could potentially create informed citizens, enhance democracy, and promote egalitarianism. Burgess and Green (2009) also note that along with being a broadcasting network, YouTube functions as a media archive, a social network, and a significant public space or even a public sphere. However, others have lamented that the internet's online communities have not lived up to their utopian promise, with their male-dominated discourse (Herring, 1996; Lambiase, 2010). As communities grow larger and are unpatrolled, they also have a propensity to attract flamers, trolls, and random hyperbolic comparisons to Hitler, a phenomenon also known as "Godwin's Law" (Rational Wiki, 2018). Indeed, the YouTube comment board is often guilty of these flaws as well as being susceptible to topic decay. Instead of the ideal Habermasian public sphere, one often finds a Babel of name-calling, invective, and nonsense.

Despite the quality of communication, there are, nonetheless, significant people visiting YouTube and having conversations there. According to a Pew Report, YouTube is the second largest social media site, with 45% of Americans visiting it daily and 18% getting their news from its videos and comment boards (Grimlich, 2018). The YouTube comment board also contains substantial interaction, with, on average, 25% of comments being replies to others (Thelwall, 2012). In his large baseline study of over 9000 YouTube videos, Thelwall (2012) also found that certain subjects motivate rich comments and extended conversations: religion, politics, general science, and climate change. In other words, YouTube is a place to study the comments and conversations about weighty topics, such as climate change.

Although it is impossible to consider the YouTube comment board as a representative probability sample of the general population, it is nonetheless a place to study the unfiltered viewpoints of audiences spanning education, age, ethnicity, and class (Lange, 2008; Thelwall, 2017). And perhaps because it attracts animosity, it is a significant place to measure often ignored feedback about media reception, such as if popular satirical climate change discourse is working and for whom it is doing so.

A gap in the research alone is never a legitimate reason to study a phenomenon, but it is a fact that YouTube "has attracted little social science research compared with general social network sites" (Thelwall, 2012, p. 616), even though the richness of digital data (both Facebook and YouTube), according to Ignatow and Mihalcea (2018), rivals that derived from more traditional sources, such as surveys. Although many surveys are based on convenience samples, which might force a regression to the mean, YouTube is a place to hear dissenting, marginalized voices, even if hearing these voices means first wading through its muck.

3.2 Method and Process

Sandvig and Hargittai (2015) argue that the clipped style of modern research article writing, which is not natural and has developed over time, often drastically summarizes methods and results, so that future readers cannot fully understand, let alone question the research process (p. 3). Rather than a recipe for the reader, the methods section aims to ward off concerted attacks from the reviewers or the dissertation committee, and, as such, this section regularly downplays or subordinates problems. To avoid these pitfalls, digital researchers should be reflexive, constructing an honest narrative that articulates why they chose their methods, their

problems and pitfalls, and the limits of their research. Thus, without being too redundant, the methods section below provides as much detail as possible.

For this paper, the CAQDAS package NVivo 11 Plus was used, which is specifically designed to code online data. This software was implemented to organize, annotate, and code the comments. YouTube, despite being a wealth of online data, has this major constraint: its interface allows only two interfaces to sort and then upload comments: "newest first" and "top comments," with the default being the latter. Because of this limitation, it is almost impossible to capture from "oldest," for repeatedly scrolling down to the bottom of YouTube tends to make the interface suspicious, which usually results in it freezing.

Because of this constraint and because of the interest in continual engagement with this video, rather than comments that earned the most likes and attracted long strings, the "most recent" option was chosen. On Nov. 11, 2017, using N-Capture in Google Chrome Browser, 1017 comments were uploaded, which needed significant cleaning due to NVivo picking up several off-topic comments and lengthy conversations (which may be later used for investigating climate change learning). Some of these conversations were indeed serious, such as the debate about Antarctic ice and the technology for predicting temperatures, but several were innocuous and nonsensical, just as the 23-comment loosely connected string that riffed on Oliver's joke regarding the existence of owls. For the purposes of this study, the unit of analysis was the individual comment.

Next, the entire population of comments was read several times and organized according to stance: whether the commenter primarily agreed or disagreed with Oliver's argument and their reason for doing so (constituting themes). Because many viewers were engaged with or outraged by Oliver's video, a significant number of comments (160) were labelled as "off-topic"—nonsense, sarcasm, random swearing, repetition of Oliver's jokes, attacks on other commenters —because they did not express a clear negative or positive stance on Oliver's argument. For instance, consider this post from Interrobang: "Climate change is a myth perpetuated by Big Science! More and more of our tax dollars are going to fund these greedy researchers." Here, it is difficult to determine whether the commenter believes that climate change is one of the most expensive hoaxes in human history (a giant profit-generating scam) or if he is parodying extreme conservative paranoia and climate change skepticism by transforming "Big Oil" into "Big Science."

In extended conversations, individual comments were coded only if they appeared to represent new themes. That is, if someone asserted repeatedly that climate change was a hoax, that theme was counted only once. After this cleaning and partial sorting, there remained a body of 513 comments for further detailed analysis and thematic coding.

Because the research question focuses on resistant audiences, the comments with a negative stance were subjected to detailed thematic analysis to determine exactly why commenters disagreed with the segment. The construction of themes, a very recursive process, used both inductive and deductive approaches. After themes emerged from the data, subsequent comments were placed in them and later regrouped and refined upon subsequent re-readings. Scott (2006) contends that in thematic analysis, "a set of categories must be exhaustive in that they allow every relevant item to be classified into one of the categories; and the categories must be mutually exclusive in that it is not possible to classify any item into more than one category. These criteria reduce the ambiguity of classification" (p. 41). Therefore, rather than double code texts, each comment was placed in the theme it most obviously represented, a process that took at least three readings.

Markham and Baym (2009) strongly advise that responsible internet researchers include a brief section explaining the ethics of their project. According to the protocol from the Office for Human Protections (OHRP), this project, which contains public information, low topic sensitivity, low degree of interaction, and low subject vulnerability, requires no consent from these YouTube commenters (McKee & Porter, 2009, p. 97). In short, there is no expectation of privacy on the YouTube comment board and the subject of climate change, though controversial, is a widely debated public issue. Nonetheless, to avoid embarrassing certain commenters or facilitating the construction of a virtual self from these and other online data contributions, I have removed either their last names or the second part of their pseudonyms. If, however, the commenter has used only a first name, the name has not been altered.

4. RESULTS: PROBLEMATIC PERCEPTIONS OF ETHOS

4.1 Overall Breakdown of Themes

Although John Oliver's video currently has a 96.6% "like" rating, the comment board revealed far more opposition to the video. Of those who take a stand on the video's argument, 46.8% of the comments approve of this video and its argument whereas 53.2% disagree with its stance on climate change. Although this is the subject of another paper, several commenters stress the continuing relevance of this video, especially given President Trump's recent statements on climate change and his questioning of the legitimacy of climate science. Those with a negative stance often have lengthier feedback and tend to drive further negative comments, which is in keeping with trends noticed by Chmiel, Sienkiewicz, Sobkowicz, Paltoglou, Buckley, Thelwall, & Holyst (2011) and Reagle (2015).

As could be expected, many of those commenters who object do not engage deeply with the video's argument. Instead, many repeat persistent frames (Nisbet, 2007) about climate change, such as the claim that addressing climate change will hurt the economy or that climate science is unsettled. Commenters also repeat common media-perpetuated myths about climate change, such as the following: climate change fear is exaggerated; climate change is a natural and favorable occurrence (the climate is always changing and CO_2 is the gas of life!); and the climate change crisis is a liberal hoax and/or conspiracy. The exact breakdown of the comments for negative stance is indicated Table 1.

Table 1: Common Themes

PERCENTAGE	THEME (REASON FOR DISAGREEING WITH OLIVER'S ARGUMENT AND HIS STANCE ON CLIMATE CHANGE)
2.1%	America has more important priorities than climate change.
4.1%	There are other reasons climate change is not *a or the* real problem (ice mass increasing, need for oil, chemical trails)
4.2%	Other countries are also responsible for climate change.
11.3%	Climate change is a hoax and/or liberal conspiracy.
11.3%	Climate change is exaggerated and/or unnecessarily hyped.
12.5%	Climate change is natural and/or good (featuring "C02 is the gas of life").
16.2%	Climate change is still debatable because all the science is not yet in.
16.5%	Oliver and Bill Nye, for various reasons, are not credible figures to speak for science.
21.8%	Oliver's argument cannot be trusted because it relies too heavily on the consensus position and demonizes climate change skepticism.

Given that celebrities are often criticized for taking up safe, mediagenic environmental causes (Brockington, 2009; Pringle, 1993) and jumping on the climate change bandwagon, a certain resentment of Oliver's stance and criticisms of his credibility, as both a celebrity and a comedian, was anticipated. However, what was not expected was the range of attacks on both Oliver's and Nye's ethos, which together comprise the weightiest themes. The next section focuses on and briefly summarizes the various assaults on the credibility of both Oliver and Nye's personae as well as Oliver's enforcement of the consensus position.

John Oliver and Bill Nye are Not Credible to Speak for Science.

A small number of commenters critique Oliver for relying too heavily on informal logical fallacies himself, a flaw that makes him and his accompanying argument not credible. Commenters find Oliver guilty of using circular reasoning and begging the question (1), not including actual scientists who disagree with global warming (which could be construed as cherry-picking or stacking the evidence for his case) (2), demonizing and straw-manning skeptics (*ad-hominem* attacks) (4), using tactics of intimidation (1), jumping to conclusions that climate-change policies will make a difference (1), and misrepresenting and simplifying Cook et al.'s argument (2). What is intriguing about this feedback is the expert identification of his logical fallacies, with one exception. Many commenters erroneously label Oliver's announcement of the 97% consensus as a bandwagon argument, when this fallacy is usually reserved for calling out a majority that has no expertise or is fundamentally wrong.

However, the majority of commenters accuse Oliver of misusing his own celebrity and popularity. This tactic, along with the image of the scientists at the end of the video, are construed as faulty authority appeals (12). One commenter remarks, "I'm just not going to believe something because it is the popular belief and everyone on TV says it is true. Anyone who believes things are fact purely on that criteria is a fool, and needs to employ critical thinking in their life or they will just be manipulated by the TV all their lives" (Juan). In other words, Oliver is reproached for using logical fallacies and capitalizing on his own celebrity to deceive his audience and shut down their critical thinking faculties.

The YouTube comment board also reveals a variety of criticisms of both Bill Nye's and John Oliver's ability to represent science. Comments against Bill Nye, particularly vitriolic, indict both his practical wisdom (his ability to do the right thing at the right time) and his disinterest. Of the twenty-eight comments discussing Nye's credentials, there are 17 referring to him make believe, fake, or not a real scientist. Interestingly, several of these criticisms of Bill Nye are very conventional: he has lost his credibility to speak of and for science because of his popularity and stardom. In other words, he is no longer one of the people. Nye is also considered untrustworthy because he leverages his significant celebrity power to appear in these televised climate change debates, which, unfortunately, he does again here.

What constitutes a scientist and who gets the privilege to represent and speak for science are also debated. Commenters repeatedly affirm that Nye is not, in fact, a practicing scientist but a fake one, a huckster, and an employee who failed thirty-years ago at Boeing (there are several of these particularly personal attacks). According to commenters, Nye is not credible because he has neither published in his academic field nor acquired any expertise in climatology. Frank affirms, "First off, Bill Nye the 'science guy' is not a climate or meteorological scientist. . . . he has a degree in mechanical engineering, which is a bachelor's degree." Because no reference is made to Nye's dedication as a popular science educator, there is a sense that even if he has thoroughly researched climate change and relentlessly represented it as an environmental crisis in several media outlets, this work does not count as science. Another commenter, Count, also blames Nye for further contributing to climate change confusion:

> As far as the public is concerned, he is just another TV personality, equal to any TV personality that Fox News can hand-pick to debate him. This allows Fox News to easily defeat climate science in the court of public opinion. If Bill Nye refuses to debate climate change on Fox News, Fox News will either be forced to invite real climatologists with degrees from prestigious institutions or just not invite anyone to represent the side of climate change acceptance, and viewers will be less impressed by its attacks on climate change.

In other words, by continuing to participate in these debates and advocate for climate change action, Nye is fueling the conservative media. By speaking about climate change in this place and time, Nye reveals he has neither expertise nor practical wisdom; his contribution is definitely out of place. His impartiality is also questioned; he is repeatedly accused of being a puppet of the left, a pawn of industry, and even a "SJW [Social Justice Warrior] meathead" (Count). Thus, there can be, in Burke's (1969) terms, no identification with him or acceptance of his argument. Bill Nye cannot be trusted because he is not one of these commenters, but a celebrity and a fake scientist speaking out of turn.

The comments against Oliver's persona and his values are more varied, with several verging on lowly *ad hominem* attacks. Three commenters call him an uninformed idiot and two British people deride his Birmingham accent; others critique this skit for being both too

political and unfunny, with a few lamenting the quick demise of Oliver's talent. Overall, however, Oliver is mainly disparaged for his seeming lack of virtue and craft. That is, commenters disagree with this segment because, like Bill Nye, Oliver has no climate change expertise; in other words, he cannot speak for science if he is not part of its community or affected by its doxa. This lack of investment is noted by Air, who accuses Oliver of merely being "PUPPET [*sic*]" delivering a speech that is the collaborated production of sixty writers. Another repeated complaint is that television comedians definitely have "no right" (again, practical wisdom) to communicate science, especially when those comedians have overtly liberal politics: "This man isn't a god, and neither is Bill Nye. Sure, Oliver can be funny, but you need to understand that he is pushing an agenda like everyone else" (Total). These comments usually segue into others that accuse *all* scientists of possessing devious liberal agendas.

Other commenters reprimand the host for not sharing their values; Oliver does not "fit" with them because of his celebrity, Britishness, outsider status, and left-leaning politics. Oliver's fame, then, is a double-edged sword; it gives him a very public forum (and a large staff of writers) to address climate change, but it is also invoked against him by commenters who call him a hypocrite—someone too rich and too privileged to care about the environment, let only judge Americans. In this last series of remarks, many commenters regard Oliver as disconnected from the effects of climate change; commenters do not trust him because, on many levels, they cannot identify with him.

Oliver's Argument Cannot be Trusted because it Relies too heavily on the Consensus Position and Demonizes Skepticism

The largest theme, from commenters who disapprove of this video, both somewhat and very strongly, consists of what are seen as the biggest blows to Oliver's ethos—his over-reliance on scientific consensus and his misrepresentation of the scientific process—both of which cause him to demonize skeptics and the skepticism integral to the scientific process.

Targeting Oliver's use of Cook et al.'s bibliometric study, some commenters label the 97% number as a hoax debunked years ago. Allen exclaims, "There are around 32000 American scientists that signed petition to the USA government to reject global warming agreement signed in 1997. That's a fact!" Others take aim at Oliver's final visual metaphor (in which he brings out 97 lab-coat wearing scientists to represent Cook's 97% consensus), which they see as an attempt to deceive the viewers. For instance, Juan demands that someone prove to him that,

> 100% of the worlds *[sic]* scientists were poled 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. The results of that study were twisted into 97% of all scientists believe that Global Warming is a fact, that we are causing it and it is a fucking disaster.

Oliver is also repeatedly censured for what is regarded as his simplistic equating of scientific progress with consensus, his distortion of scientific decisions as democratic polls people vote on, and his left-leaning bias.

> Just because a proportion of the scientific community AGREES upon something does not mean that that fact gets a pass. Science is "not about consensus, it's and demonstrable, empirical, verifiable

EVIDENCE. Why did you not have the actual scientists who don't agree with the popularized politicized narrative that humans are the cause of global warming? Bias much? (mytuber)

V also states that "science doesn't necessarily yield truths . . . . that is NOT its goal. Truths are for philosophers. Science is a tool for us to make decisions with." Another affirms that "Science isn't this holy grail of truth, its research which leads into conclusions that are true until proven false" (Caz). Drawing on history, many note those times when consensus failed by citing the once popular views that the Earth was flat, the universe was geocentric, or the atom could not be split. One person makes this statement, which is attributed to Galileo:

In the sciences the authority of thousands of opinions is not worth as much as one tiny spark of reason in an individual man. Besides, the present observations deprive all former writers of any authority, since if they had seen what we see, they would have judged different. (Javier)

At least two things are transpiring in these and other similar comments. On the one hand, the consensus model of science is challenged by the dissension view of science, or the idea that science proceeds not by majority rule, but by theories being challenged and paradigms shifted and eventually replaced (Kuhn, 1962). On the other hand, many commenters who object to the consensus position remind others of the skepticism inherent in and crucial to the scientific enterprise itself, a tactic discussed at length by Oreskes and Conway (2010). These same people often use the uncertainty wedge to re-open the climate change debate, such as in this comment by Vance:

dont *[sic]* you think its kind of odd to have said that being skeptical is the same thing as being wrong? done in the first half of this video? skepticism could be due to not having seen enough knowledge, or questioning exactly how the information was gathered.

In other words, by stressing that all the evidence is in, Oliver forces commenters to be skeptical of this very certainty and recall the dissension model of science. The problem with asserting the certainty frame, then, is that it can equally be challenged by and then dismantled with the skepticism/uncertainty frame, making the debate continue, and the "manufactured scientific controversy" (Ceccarelli, 2011) persist.

Others take issue with quieting this skepticism without explaining the actual process of climate change, detailing the metrics of Cook et al.'s study, and/or explaining what consensus actually entails. "Consensus does NOT make truth," Universal argues. What Oliver's comedy should have done is "[s]imply explain the water cycle, how carbon creates a blanket which holds in heat from the sun, compare Venus to Mars . . ." (Universal). Gari also argues 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. That's not an argument per se, for someone not familiar with the scientific method. . . . EVEN if they are wrong, dangerous and stupid.

In other words, without explaining that scientific consensus is the result of years of difficult (and underfunded) research and peer-reviewed scholarly articles, the concept of "consensus" might confuse and alienate people. Instead of understanding how science works, commenters feel forced to respect scientific authority without understanding *why* they are doing so. Another complaint is that repeating the term "consensus" becomes a mantra that transforms climate

change activism into a veritable cult, a comment that leads to further discussion of how climate change is a liberal, Hollywoodized problem.

Some commenters also claim that enforcing consensus and shaming skeptics are bullying tactics—the rhetorical equivalents of shoving "compliance down people's throats" (Gari). They accuse Oliver of being a hypocrite for drowning out dissent when he, as a satirist and critical thinker, is supposed to speak truth to power. One commenter (Allen) adds that "if you want to bring republicans on your side, you have to stop mocking them and start addressing the little facts. You have to either stop calling climate change deniers *deniers* or start calling climate change *apologists*." Nathan agrees that "asking for people to believe with the threat of them being mocked and called retards isn't smart . . . . some politicians will be happy to say that we are the stupid ones, and guess what? They don't need to be right to vote." In other words, this type of name-calling not only makes people question Oliver's credibility and his fairness but also could have serious political repercussions.

In short, asserting that there is an overwhelming consensus may work on Oliver's receptive fans, those HBO viewers who agree with his politics and his values, but not work on a disenfranchised population who may distrust both scientists and authority. In other words, the consensus position makes him fail to identify with and consequently persuade a proportion of this YouTube audience. Because of Oliver's tactics, the most vocal doubters come out in full force, referencing those times when global warming predictions missed the mark. On recent worries about AGW, one commenter proclaims,

> We are skeptical about what the effects will be, not that the temperature is rising. By the way, didn't Al Gore tell us that sea levels would have risen dramatically by now? How many years until we start feeling these dramatic negative effects? And how many times do you get to change the timeline? Please tell me. (Nathan)

The comment board becomes dominated by lengthy anti-climate change comments that instigate longer arguments involving statistics, charts, and seemingly believable science. It becomes cluttered with links to popular skeptic sources, such as articles by well-known Intergovernmental Panel on Climate Change (IPCC) critic and atmospheric scientist Dr. Judith Curry (2013) as well as climate change conspiracy crusaders James Taylor and Mark Morano. The notorious Oregon Petition with its 32,000 signatures is repeatedly referenced. One person (V) contributes a meandering 12-paragraph post with 152 references to anti-climate-change sources. And he repeats this post several times, clogging up the comment board in an attempt to stress the legitimacy of the field of anti-climate change research.

In other words, by overstressing the consensus position, aligning himself with scientific authority, critiquing the conservative media, and dismissing climate change skepticism, Oliver and his message are resisted and challenged, perhaps by those most in need of learning about the climate change crisis. And in terms of ethos, Oliver's values, craft, and disinterest are all perceived as damaged by over-stressing the consensus position and mocking those who don't accept it. Opposing viewers deem him, Bill Nye, and the science they speak for not credible.

5. SOME SUGGESTED STRATEGIES FOR APPEARING MORE CREDIBLE

Admittedly, Oliver is a comedian, so holding him to high standards of trustworthiness may seem both inappropriate and unreasonable. And from a political economist perspective, Oliver is not an activist but merely a celebrity paid to create a certain satirical product to be sold to his

target audience—his HBO viewers—so that they will continue to enjoy his program and subscribe to his channel. And YouTube, which is a favorite dwelling place of trolls and naysayers, may over-represent viewer antagonism.

But as a 2014 Peabody Award winner who has gravitated toward controversial topics, such as net neutrality, Oliver seems genuinely concerned about making a difference, about using his satire to communicate beyond his relatively small paid subscription audience to other viewers and inform them about pressing political and politicized manners. And even if it does exaggerate animosity, the YouTube comment board does reveal what, for some, *isn't* working about Oliver's science communication tactics. It does reveal the marginalized voices of those who perceive they are being ignored, if not mocked.

In this section, Aristotle's three essential qualities of persuasive ethos are returned to in order to offer some concrete suggestions for strategies that Oliver might use to enhance the perception of his credibility and trustworthiness.

Suggestion #1: Develop Virtue

To develop virtue, satirical comedians like John Oliver ideally need to share the values of their audiences, but, in the least, they need to acknowledge these values so that their climate change communication messages fit with their various viewers' values. Instead of politicizing climate change, and alienating moderates, libertarians, and conservatives, communicators should frame climate change in ways that cross the partisan divide by appealing to common values. Nisbet (2009) suggests that

> [t]o break through the communication barriers of human nature, partisan identity, and media fragmentation, messages need to be tailored to a specific medium and audience, using carefully researched metaphors, allusions, and examples that trigger a new way of thinking about the personal relevance of climate change. (p. 15)

For instance, he suggests framing climate change effects in terms of morality, a crisis of public health, and an opportunity to grow the economy. In other words, avoid the certainty frame, which often invokes its doppelganger, the equally sticky uncertainty frame, which was most expertly used by climate change skeptic strategist Luntz (Nisbet, 2009, p.19).

At the same time, speakers should avoid alarmist tactics, which not only invoke audience distrust but also may make climate change skeptics suspicious of celebrity environmental activists and their hyperbole. Because they are getting paid to frighten and/or entertain us, celebrities might appear especially untrustworthy when they invoke visions of catastrophes and messages of doom. Furthermore, alarmist tactics tend to make skeptics recall other exaggerated but failed predictions of climate change effects, which then stirs up doubt, corrupts the entire argument, and reopens the climate change debate (Ceccarelli, 2011).

Suggestion #2: Embrace, but Qualify, Practical Wisdom or Craft

To appear that they have sufficient practical wisdom or craft, speakers should embrace their celebrity while noting their lack of expertise. If Oliver had admitted, as Jimmy Kimmel often does, that he is but a concerned, uneducated comedian, or used the strategy of self-effacement and what Quintilian referred to as useful doubt or *dubitatio* (Heinrichs, 2013), he may have appeared more believable and less condescending. In *dubitatio,* the speaker appears reluctant

to discuss something "they are really eager to prove" (Heinrichs, 2013, p. 75). For instance, imagine if Oliver had editorialized at the end of his segment by confessing the following:

> Look, I don't really want to talk to you about this; I'm not a scientist, and although I read the papers, I really don't know H20 from hydrogen dioxide. But I had my crack team of writers research climate change and come up with this monologue about scientific consensus because I care, like YOU should, about this planet. I'm sure you don't want your grandmother and your grandchildren to die in heatwaves or to be devoured by polar bears or ticks. *If* I am exaggerating, it is because I am trying to get your attention and because I see climate change as a serious public problem.

Admittedly, this proposed ending would have been less climactic and less humorous for his HBO audience. But a similar strategy that showcases Oliver's lack of scientific knowledge, but overwhelming concern, may have allowed him to identify better with those resistant viewers and make them listen to his message. By admitting that he has a stake in climate change as a global citizen, and that, despite his comedy and celebrity, he is genuinely concerned about this crisis, he would have invoked the morality and ethics frame (Nisbet, 2009, p. 18), which might bridge the partisan divide.

To appear to have more practical wisdom and craft, Oliver could also use stronger expert sources in this and other climate change segment(s). As popular as Bill Nye is as a science educator, much of the extreme right (at least as revealed on the comment board here) perceive him to be a politicized puppet. Oliver might have avoided some of the attacks on his expertise (and Nye's) had he used an actual climate scientist, such as Dr. Ben Santer, who, with a PhD in Climatology, is a leading climate change researcher at Lawrence Livermore National Laboratory. It was his early research that led to the 1995 IPCC Report's conclusion that there was a discernible human influence in the planet warming (Oreskes & Conway, 2010). Despite being relentlessly attacked by climate change skeptics since the 1990s, Santer, in his few appearances on television, most recently on Seth Meyers' program, *Late Night with Seth Meyers*, has come across as professional, modest, concerned, and believable.

Suggestion #3: Use Tactics to Appear Fair and Balanced

Lastly, satirical speakers like Oliver should recognize their own politics and potential bias in order to build a bridge to oppositional audiences. For instance, Oliver might have appeared fairer had he stepped away from mocking skeptics to explain the process of how a scientific community arrives at consensus. He also might have appeared less biased and reached out to his conservative viewers by comparing the climate change controversy to others that are less politically polarized, such as the anti-vaccination movement or anti-fluoridation campaigns. That is, just as there is scientific agreement on vaccine and fluoride safety, there is the same on anthropogenic global warming.

Speakers should also emphasize the weighty evidence on anthropogenic global warming (AGW) without overly stressing scientific consensus in a way that throws both their credibility and their entire argument into doubt. It is important to understand that stressing consensus alone is not enough. Kahan, Jenkins-Smith, and Braman (2010) have argued that in "the realm of moral choice, the 97 percent consensus can be polarizing" (np). In other words, if that one quarter of the "wrong" Americans that Oliver targets feels intimidated by statistics, they might disregard the message, remain apathetic, harden their climate-change denying

beliefs, and perhaps vote in an even more dangerous climate change skeptic in the next American election.

Furthermore, as much as possible, climate change communicators should avoid name-calling Republicans, such as referring to skeptics as "idiots" and "deniers," and/or referencing the Republican War on Science (Mooney, 2005). Bullying tactics may make for funny comedy, but not effective climate change communication.

6. CONCLUSION

Future research may involve uploading more comments to check for consistency and replication, refining methods, and analyzing the lengthier climate change conversations on the YouTube comment board. Furthermore, it may be important to explore whether the problems with trust and credibility expressed by audiences here compare to responses to other satirical climate change videos, such as those by Jimmy Kimmel, Samantha Bee, and Seth Meyers. Other studies may also involve a much deeper analysis of both persuasive ethos and Burke's (1969) idea of identification, for admittedly, the surfaces of these have merely been scratched here.

Nonetheless, this paper ends with the point that satirical TV hosts, like John Oliver, have significant social and cultural capital to draw attention to climate change and to correct and re-invigorate its coverage in the media. Therefore, if he, and others like him are interested in effectively leveraging their celebrity statuses, moving beyond preaching to their proverbial choirs, and engaging wider audiences in fruitful climate change conversations, they should consider adjusting their tactics to improve their appearance of credibility and to better identify with (and hopefully persuade) resistant audiences. In particular, they need to tread carefully when stressing the consensus position.

In short, by taking the time to "read the comments," researchers might be able to understand how not only comedians but also other climate change communicators might strengthen the appearance of their credibility and build successful strategies to persuade oppositional audiences.

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