# Performing Truth: The Navigation of Climate Change Reality in the United States

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Roan Shea

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## Abstract

I started this research with the acknowledgement that in the United States there is a growing fear in politics and the media that we are losing our valuation over the objective truth. There is a strong desire for objectivity within truth-seeking processes but I am also interested in something else. The central question of my research is the following: *How might an increased consideration of the performance of truth provide a more comprehensive picture of reality?* Within this paper I develop a framework for navigating the concepts of performance and objectivity. I apply this framework to the understanding of global climate change in the United States through a narrative and performative analysis of the March, 2017 United States Congressional Hearing on Climate Science. With this analysis I seek to answer the following question: *How does performance within the United States Congressional Hearing on Climate Science contribute to audience understanding of the reality of climate change?* The performance of the hearing creates a space in which the prevailing narrative can control the audience understanding of climate change reality. This suggests that rather than attempting to strip down and simplify the truth into objective facts OR disregard the possibility of something being objectively true, an increase in our understanding of the performance of truth will allow us in the end to have a more objective understanding of reality. Rather than trying to eliminate the "political theatre" (as is suggested again and again) what may be more beneficial is to embrace the inescapability of this performance and work to understand how we are situated within that performance. This has resonance with a number of other studies on nonverbal communication as well as the differing powers of television and radio on audience perception. My research suggests that an implementation of more analytical performance and simulation based material in education would be a productive way to prompt students to think comprehensively about how performance affects truth perceptions.

## 1. Introduction

In 2016, Oxford Dictionaries named "post-truth" the word of the year (Oxford Dictionaries 2016). The word of the year, as Oxford Dictionary states, best reflects "the ethos, mood, or preoccupations of that particular year". They define post-truth as: "relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief." This certainly has resonance in the United States, where there is a growing fear in politics and the media that we are losing our valuation over the objective truth. News articles such as the New York Times's "The Age of Post-Truth Politics" raise concern with the status of facts in the political sphere as rhetorical devices rather than things "we can all agree on" (Davies 2016), and blog posts like the Huffington Post's "Trump And His Press Secretary Flagrantly Lied On Their First Full Day In Office. That Matters." propose that blatant political lies told to the people, no matter how irrelevant (e.g. the size of the crowd at President Trump's inauguration) feed into the larger query of whether or not words and facts have meaning in today's world (HuffPost 2017). Important decision making relies on how we conceptualize the truth, and within a so-called post-truth society, how does this decision making play out? I believe this to be a vitally important question.

The definition of post-truth gives a clear delineation between "objective facts" and "appeals to emotion or personal belief." A common sentiment in the US right now (as seen in previously mentioned articles) is that de-valuing these objective facts is problematic. After all, how can one accurately understand the reality of an issue and make good decisions without the support of reliable facts? However, before getting to this point I would like to question the premise of post-truth itself (specifically the supposed separation of facts and emotional appeals) and inquire into the neglected idea of performance within discussions of truth. This leads to the central question of my research: *How might an increased consideration of the performance of truth provide a more comprehensive picture of reality?*

I will begin with a discussion of truth- what we mean when we say it, and how relevant frameworks work to describe reality. I will discuss how science fits in to our notions of truth, specifically in the context of climate change, and how our desire for traditionally objective truth can be problematic. Next, I will discuss performance, and how expanding our concept of performance might actually lead to a more objective understanding of reality. I will then take this framework and apply it to how global climate change is understood within the United States. I will do this by analyzing the March, 2017 United States Congressional Hearing on Climate Science, and asking the following question: *How does performance within the United States Congressional Hearing on Climate Science contribute to audience understanding of the reality of climate change?* Through this analysis I will show that the understanding of climate change coming from the hearing relies on a narrative that is wholly incomplete outside of the performance itself. The performance of the hearing creates a space in which this particular narrative can control the resultant audience understanding of climate change reality. This would suggest that rather than attempting to strip down and simplify the truth into objective facts OR disregard the possibility of something being objectively true, an increase in our understanding of the performance of truth will allow us in the end to have a more objective and comprehensive understanding of reality.

In addition to the following paper, I have explored these themes artistically in an original piece of theatre titled *Knock Sniff*- the video of which you can find on my capstone landing page. At the end of my paper, I include an Appendix where I briefly explain my goals for the piece, as well as the theory and implementation.

## 2. Background

### 2.1. Truth and Reality

As Searle says in *The Construction of Social Reality*, "We live in exactly one world. Not two, or three, or seventeen" (Searle 1995, 1). While this is debatable in terms of certain theories of physics or philosophy, for our purposes we can assume we all live in the same singular reality. Concepts like social relativity, which suggest that something can be real for one person, but not real for another (Berger 1991) are important to consider, but have more to do with our human-specific ways of interpreting reality than they do with the actual state of our world (I will go further into this later). Describing our singular reality can be accurately done in some ways through the natural sciences, but we start running into issues with things that are not strictly physical in nature. Searle asks the question how it all hangs together (1995) in relation to the complexities of the physical and non-physical elements of our singular reality.

This is a very broad question that has been addressed in many different ways. How do we go about making sense of our reality, and what do we mean when we state that something is true? As Johnson summarizes, the two most prominent theories of truth are that of coherence and correspondence (Johnson 1992). Coherence theory proposes that beliefs/statements are true if they fit in with the existing body of other beliefs. Correspondence theory posits that in order for a statement to be true, there must be a relationship between the statement and the observable facts that support this statement (1992). In other words, the statement must correspond to what we observe in order for it to be true.

Taken together, these theories give us a simplified framework of how to gage truth statements. For example, we could say that the statement "All matter is made up of atoms" is true because we have observed atoms under electron microscopes, and this theory coheres with other work in the fields of chemistry and physics. However, even though this is true we might also say that all matter is made of protons and neutrons, or quarks, and these statements could be deemed true as well. Additionally, how do we gage the truth of statements such as "human-caused climate change is real and poses a threat to humankind?" Correspondence and Coherence are not totally equipped to handle the kind of complexity that comes from the interaction of thousands of studies, reports, and value systems. As Roger Pielke Jr. says in *The Climate Fix*, we too often view this messy debate as a black and white "morality play… with virtue and reason on one side and evil and corruption on the other." (Pielke 2010, ix) However, "Reality… is actually colored in grays. So to is in the world of climate change" (2010, ix).

In summary, I will assume moving forward that we all live in the same singular reality, but this reality is made up a web of physical and non-physical elements that render any one reductionist theory of truth incomplete. The seeking of truth in the context of complex issues like climate change is built on many factors.

## 2.2. Science and Climate Change

What particularly interests me is the role of science in our truth-seeking. Discussions of science are ever-present in debates about truth, especially when talking about issues such as climate change, where scientific knowledge is crucially important. However, there are significant differences in opinion between views of science and reality, as shown by a large body of scholarship (e.g. Latour and Woolgar 2013, Hacking 1999).

The reality of climate change is on one hand very clear: there is widespread scientific consensus that climate change is occurring and is largely human-caused (Oreskes 2004). However, this relative scientific consensus has not extended to a widespread agreement on the intricate reality of climate change, and certainly not an agreement on what we should be doing about it. This tension is oftentimes chalked up to messy politics that interfere with the relevant objective facts. For instance, the United States in particular is less convinced of climate change than other developed nations (Norgaard 2011), and this is highlighted by polarized political parties. The Yale Partisan Climate Opinion Maps (2016) show that an estimated 65 percent of Democrats believe climate change is primarily human-caused, versus only 31 percent of Republicans. This suggests significant political influences over climate perceptions that complicate objective views. Additionally, it is not only perceptions that are influenced by political affiliations, but maybe scientific findings themselves. Demeritt argues that this politicization of science not only comes in to play after research is done, but also on the upstream end as politics lead scientific inquiry and method (Demeritt 2001).

This argument is impactful in the context of the aforementioned fear that we are losing our valuation over objective truth. For science to be objective, would it not need to be done outside of any value-laden influences? This is at least in part the goal of reproducibility and peer review, but the social influence may stretch beyond this. Demeritt writes that

> *Public representations of science seldom acknowledge the irreducibly social dimension of scientific knowledge and practice… the demand for and expectation of policy relevance has subtly shaped the formulation of research questions, choice of methods, standards of proof, and the definition of other aspects of "good" scientific practice.* (Demeritt 2001)

For Demeritt, what is problematic is not that science has political influences, but the actual distinction between science and politics itself. To say that science must be completely separated from values is unrealistic, but this does not mean scientific findings are any less important because of it. This interconnectivity should *not* be used as an argument against the validity of knowledge gained from scientific exploration (2001).

Demeritt's framework shows how scientific practice can be socially influenced like people fear, but still have important results. What now needs to be looked at is the concept of objectivity itself.

## 2.3. Objectivity

The idea of a separated reality which we can study from an onlooker position is how Katherine Hayles defines "traditional objectivity" in her paper "Searching for Common Ground" (1995). This vision of the possibility of objective scientific truth is what Demeritt bitingly calls the "God's-eye view from nowhere" (Demeritt 2001) because of the need to not be situated anywhere at all in order to be traditionally objective. Hayles suggests that we move away from this view, and instead recognize that everything we know about the world is due to our interactivity with it, not our separation. Rather than thinking of everything out there as an underlying reality, we should instead think of it as the "unmediated flux" (1995, 49), which only becomes comprehensible through our human-specific interaction with it.

This does not mean however that the concept of objectivity should go completely out the window. Hayles references Sandra Harding's "strong objectivity" as a more desirable goal. Harding argues that traditional objectivity is not objective enough. Instead of separating oneself from the equation, one instead needs to develop a complex understanding of how they are positioned in their life in order to become objective. The more one understands about their situatedness, the more objective they can become in a strong sense (Harding 1992).

In summary, what I want to take away from discussions on objectivity before we move to performance is that it is impossible for us to be traditionally objective because we cannot view reality from a separated position. However this does not mean claims cannot be more or less true than other claims, or that we cannot work to be more objective in a strong sense. In fact, we should do exactly this, and building a more solid understanding of performance will help us.

## 2.4. Performance

To me, the concept of performance is deeply entrenched within discussions of truth and reality, but rarely discussed in a meaningful way. As we generally understand it, a performance involves a mutual understanding between performer and audience that the events taking place are

"the antithesis of the 'real' or 'true'" (Taylor 2016, 18). The value of this "fake" performance is entertainment, but when people perceive others to be performing in day to day life there are negative connotations. Calling someone "fake" is an insult, and "political theatre" is a term used to disparage political action for being dishonest and underhanded. Politicians themselves strive to come across as real and relatable, but their political campaigns are carefully calculated.

The other most common definition of performance (as stated by Merriam Webster's Dictionary), is "the execution of an action". This provides a stark contrast to the former concept in that it situates the word performance within the present reality, not a separated performative space. But what if it were neither one nor the other? What if performance were (as Diana Taylor proposes) a concept that "move[d] between the AS IF and the IS, between pretend and new constructions of the real" (Taylor 2016, 6)? This would imply that performance is far more relevant to our perceptions of reality than simply viewing a play.

This idea is illuminated by Rhona Justice-Malloy in her book *Theatre History Studies 2010* (Justice-Malloy 2010). During the crisis decade in Zimbabwe (1998-2008), a new form of theatre dubbed Hit and Run Theatre blossomed in popularity. In order to avoid arrest under the oppressive censorship of Robert Mugabe's regime, theatre artists would stage quick, impromptu performances in public spaces that may or may not have been recognized by the audiences as performances. Without this recognition, do the actions qualify as performance? These events were situated both in the present reality of the audience members as well as in a more performative dimension. They moved between the AS IF and the IS, and illustrated how it may be possible as Taylor suggests, that performance is neither true nor false (2016).

With this being said, is it really possible to draw a line between performance and reality, or is the bond more abstract? To quote Victor Turner, "When we act in everyday life, we do not merely react to indicative stimuli, we act in frames we have wrested from the genres of cultural performance" (Turner 1982, 122). There is substantial scholarship on cultural performance, notably Judith Butler's hugely influential work on the performance of gender identity (e.g. Butler, 1990). All of this work takes typical notions of performance and brings them into day to day life.

The false binaries we have constructed around performance (fake/performed versus real/true) have resonance with the false binaries we make around science and objectivity. There is a firm desire for objectivity in science, but when our unrealistic expectations of traditional objectivity are not met, the knowledge gained is doubted. Similarly, we value truthfulness OR clearly delineated performance, but not perceived performance in real settings. However by doing this, we deny the inevitable presence of performance throughout our lives. By not acknowledging or studying these performances, we fail to grapple with the differing effects performance can have on us.

As strong objectivity suggests, the more we understand about our own situatedness the more objective we can be. In the context of my research, I am proposing that as we develop a more finely tuned understanding of the performances around us and how they influence us, we can become *more* objective about the truth of our reality, *not* less objective because of our interactivity.

## 3. Situated Context

As I have mentioned above, the United States is a strange case when it comes to climate change. Former president Barack Obama pursued climate action policy domestically and abroad, but the 2017 inauguration of Donald Trump has signaled a change of course. Despite scientific consensus on human involvement in climate change (Oreskes 2004), the US is less convinced of climate change than other developed nations (Norgaard 2011), and acknowledgment is in large part split down party lines. A Yale national survey showed that roughly 65 percent of Democrats nationwide believe climate change is mostly human caused, versus only 31 percent of Republicans, which brings the national percentage to 52 percent (Yale 2016). This low level of belief is often chalked up to a lack of education, but as Jay Odenbaugh explains in his paper, "On the Contrary" (2017), a recent gallup poll shows that education is not correlated with belief or concern, but political affiliation is. Similarly, Odenbaugh cites Kahan et. al's 2012 study which showed that increasing scientific literacy does *not* lead to increased concern over climate change. All of this illustrates how climate change can simultaneously be a physical and social phenomenon which changes and affects people differently "depending on who one is and where one stands" (Hulme 2009, 1). As Hulme argues, different perspectives on climate change are based in much more than just scientific interpretation (e.g. social phenomenon) (2009), and this is blatantly present in the United States. This, along with the fact that the US could be the place where climate inaction matters most due to international power (Norgaard 2011) make it a relevant place for my research.

On March 29th, 2017, the US Congressional Committee on Science, Space, and Technology held a hearing named, "Climate Science: Assumptions, Policy Implications, and the Scientific Method", lead by Committee Chairman Congressman Lamar Smith. Congressional Hearings are sessions held by Congressional Committees whose purpose can be exploratory or to "obtain information and opinions on proposed legislation, conduct an investigation, or evaluate/oversee the activities of a government department or the implementation of a Federal law." (US Government Publishing Office). This particular hearing was not the first Congressional Hearing related to climate change. There have been hearings explicitly investigating this subject since 1981 when Al Gore organized a session titled "Carbon Dioxide and Climate: The Greenhouse Effect" ("Gore Hearing on Global Warming, July 31, 1981."). At this point, Congress was just beginning to grapple with the possibility of an exacerbated greenhouse effect that was warming our climate. As our knowledge on climate change has progressed, the nature of relevant hearings has changed as well.

Park, Liu, and Vedlitz provide an analysis of the form of Congressional Hearings in their 2014 paper "Analyzing Climate Change Debates in the U.S. Congress: Party Control and Mobilizing Networks". According to the authors, conflict in Congressional Hearings come from two sources: the framing and selection of issue aspects, and the selection of expert witnesses (Park, Liu, and Vedlitz 2014). Both of these processes are carried out by Committees dominated by the Congress majority, which inevitably shape the outcome of the hearings. Congressional Hearings on climate change are no different, and it is important to note that the March 29th hearing came during the 115th US Congress, which was made up of 51 Republican and 47 Democratic Senators, and 236 Republican and 193 Democratic House Representatives. This ratio correlates with the Motherboard survey which pulled together a comprehensive list of climate

opinions in Congress. According to this survey, 53 Senators and 232 House Representatives in the 115th Congress are skeptical, or do not believe that climate change is human-caused (Neuschatz 2017). In total, around 53 percent of Congresspeople are not convinced that climate change is human caused. This means that there are even fewer Congresspeople who believe climate change is human caused than the US national average (as calculated by Yale 2016).

The March 29th hearing's stated purpose was: "*to examine the scientific method and process as it relates to climate change. The hearing will also focus on the underlying science that helps inform policy decisions.*" This suggests an attempt by the US government to come to an objective consensus on the truth of climate change.

However, this hearing came at a time when the administration did not seem to be in any doubt about their stance on climate change. President Trump had recently stated intent to roll back the Clean Power Plan (which was a primary point of discussion in the hearing), and throughout his campaign had vocally criticized the Paris Climate Agreements, as well as the validity of human-caused climate change itself.

Within the hearing there were four expert witnesses available for questioning by the congressional committee. The committee consisted of Republican Chairman Lamar Smith and 21 Republican and 16 Democratic Congresspeople. The first witness to make a statement was Dr. Judith Curry, President of the Climate Forecast Applications Network. Curry strongly emphasizes in her work the "Uncertainty Monster" (Curry 2011), which is the monumental uncertainty that still remains about human influence over climate change.

Curry was followed by Dr. John Christy, Professor and Director of the Earth System Science Center at the University of Alabama at Huntsville. Christy is known for questioning the accuracy of climate modeling.

The third witness, Dr. Michael Mann, is a Professor of Atmospheric Science at Pennsylvania State University. Mann is a publicly outspoken climate change activist and has been at odds with all three of the other witnesses on the panel at some point.

The final witness was Dr. Roger Pielke Jr., a professor of Environmental Studies at the University of Colorado, who complicates the typical binary of climate opinions. As previously mentioned, Pielke has written on the ineffectiveness of the climate opinion false binary and pitting sides against each other as good vs. evil. Ironically, in this hearing Pielke finds himself sitting next to Mann, who he has historically had a very adversarial relationship with.

It is within this context that I will seek to answer the question, "*How does performance within the United States Congressional Hearing on Climate Science contribute to audience understanding of the reality of climate change?*" As I conduct my analysis, it will be vitally important not to separate the performance of the hearing from the historical, scientific, and social context that has set the stage.

## 4. Methods

### 4.1. Narrative Analysis

To answer this question, I will first conduct a narrative analysis of the hearing. Through this analysis I will not only consolidate the conclusion being put forward from the hearing's narrative on climate change, but also investigate the importance of how this particular *story* of climate change was told. As Cronon writes, "the very authority with which narrative presents its

vision of reality is achieved by obscuring large portions of that reality." (Cronon 1992, 1349). The narrative of the hearing will inevitably leave out significant factors relating to the reality of climate change in order to arrive at the specific conclusion. As I have previously stated, we can assume there is a reality of climate change (an extremely complex reality). However, completely different stories can be told about this reality even when they are describing the same general events and characters (Cronon 1992).

To sum up, the purpose of this analysis will not be to uncover the definitive truth of the reality of climate change, but to investigate how the story of climate change is navigated in the hearing. The incompleteness of the constructed narrative is inevitable and important to analyze. How does the story progress, what is omitted, and what effect does this have on the audience?

## 4.2. Performance Analysis

Next, I will look at the hearing through the lens of performance, which includes not just the process of the actors in the space, but the given circumstances and staging as well. How does the performance of the hearing facilitate or change the story? Ngũgĩ wa Thiong'o writes that the state has tangible power which it *performs* over those without power (Thiong'o, 1997). I will observe the performances of power that set the stage for the hearing as well as the individual actors. The ways these performances interact with the narrative of the hearing will give us a clearer picture of how important the performance was to audience understanding.

# 5. Results

## 5.1. Narrative Analysis

### 5.1.1. What's the Story?

The hearing plays out as an essentially two sided debate (with the exception of Pielke, who does not subscribe to any side besides his own) between Smith's Republicans and the Democrats, and between Curry/Christy and Mann. The narrative that seems to prevail is the one put together by Smith and others. They begin with the claim that "alarmist" climate scientists operate outside of the scientific method (Smith 15:50) and silence other scientific opinions (*claim 1*). Because of this, "our actions must be based on sound science" (Smith 15:33), and we should stop the "name calling" (Biggs 27:15) which muddles the truth (*claim 2*). From there, it is claimed that climate models have overestimated the rate of climate change (*claim 3*), which shows that we do not have a comprehensive understanding of the climate system (*claim 4*). This all leads to the conclusion that climate change debate should continue, and the Obama Administration's costly Climate Legislation should be reconsidered (*claim 5*).

### 5.1.2. What is selected, what is omitted, and why does this matter?

Smith's first claim references the 2015 study done by the National Oceanographic and Atmospheric Association (NOAA) and the 2009 "Climategate" scandal from East Anglia University. Smith claims that NOAA researchers "put their thumbs on the scale" (Smith, 18:06) while analyzing data in their study that showed there was no pause in global warming between 1998 and 2012. However, as laid on in a *Science* article, this seems to have less validity and importance than was claimed. Former NOAA scientist, John Bates did raise issues with Thomas

Karl's work, but after the fact said in an interview that "The issue here is not an issue of tampering with data, but rather really of timing of a release of a paper that had not properly disclosed everything it was" (Cornwall and Voosen 2017). The NOAA study itself showed poor data management, but the results seem to be sound, and were echoed by other independent studies (2017).

Additionally, as described in a *Scientific American* article (Vaidyanathan 2017), this issue is far more complicated. First of all, it is only the observed slow down of the warming rate that is under debate. NOAA found that the rate had not slowed, which was agreed upon by a *Science Advances* study (Hausfather et. al 2017), but disputed by others, including the 2013 IPCC report which showed high uncertainty (IPCC 2013).

Smith also claims that the emails from East Anglia show that climate scientists have conducted research irresponsibly. However the scientists involved in this research have been cleared by numerous organizations including the EPA (EPA Rejects Claims of Flawed Climate Science 2010). Overall, these statements made by Smith work to discredit specific scientists that generalize to the field of climate science as a whole. The omitted information on the other hand shows a far more complex situation that in the end does not give significant reason to believe our understanding of climate change is faulty. However, the story Smith tells comes to that exact conclusion.

Claim 2 simply proposes that we should follow the science, and stop silencing viewpoints outside of the mainstream. This is a repeated statement throughout that implies there is a silencing of debate in the field of climate science. However, as seen in numerous areas of climate science (including the rate of warming trends which I cited above) there continues to be debate. I do not mean to say that nobody who questions the legitimacy of climate change has been silenced, but rather that the implications of claim 2 omit relevant information. This specific omittance facilitates claims 1 and 2.

Claim 3 relies on data put forward by witness John Christy which concludes that recent observed temperature data does not align with the bulk of climate modeling. However this is contradicted by the 2013 IPCC report which shows that long term trend predictions have been very accurate, and it is only observations over short time periods that do not align as consistently (IPPC 2013). Again, the specific data put forward may be correct, but there is significant information describing the reality of the issue of climate change that is omitted. By omitting this IPCC data, *uncertainty* about climate change is able to dominate our current knowledge in the discussion.

This is highly significant because based off Christy's evidence, claim 4 suggests our understanding of the climate system is not complete, and claim 5 goes farther in its conclusion that climate action taken by the Obama Administration should be reconsidered. However, the supporting evidence is contradicted by the IPCC, so it is possible that the scientific understanding is far greater than he claims. Additionally, there is no scientist who would claim our knowledge of Earth's climate system is complete; there is undeniably much we can still learn about climate change. However, voicing only this uncertainty omits the bulk of scientific research in the field showing human impact on our climate and the associated risks.

In summary, an analysis of the narrative in the hearing shows the prevailing narrative leaves the audience with a very different perception of the reality of climate change than they would have with an inclusion of key omitted information. Even with a strong emphasis from everyone involved in the hearing on following traditionally objective evidence, it becomes

impossible to be accurately objective with critical information omitted. However, it is also important to recognize that within an issue like climate change, there will always be omitted information. There has been far too much theory, research, and political debate in the world to include in a two hour hearing. The story I have told with the omitted information is just one possible story about the same reality. Instead of describing our knowledge of global climate as predominantly uncertain and our navigation of climate debate as one-sided and unscientific, this story focuses on the capacity of current climate science and the high-stakes associated with the proposed inaction.

## 5.3. Performance Analysis

How does the performance of this narrative impact the audience's understanding? Interestingly enough, the performance of the hearing in some ways starts with assertions of non-performance. The formality of the hearing (e.g swearing oaths to the truth, complete restriction of mobility due to the necessity to stay behind one's microphone, formal attire etc.) assures the audience of the seriousness of what they will be witnessing, but it almost makes comprehension of what people say difficult. The formality lends itself to a common rhythm and tone of voice that is completely self-assured and certain. This performance of formality/certainty is interesting to me because in a way it is an attempt to get rid of performance within the truth seeking process of the committee. However, this attempt only delineates the performance more. There are very few modes of being allowed within this structure. This formality is a performance of power over the proceedings, and the very first thing that sets the stage for the hearing.

There are many performances of power present in the hearing, and they carry a great deal of import. Firstly, the day before the hearing, Trump performed his power by signing an executive order to roll back the Clean Power Plan, trivializing the importance of climate change. In the hearing itself, power is performed through representation and time. Republican Lamar Smith leads a committee of 21 Republicans and 16 Democrats, who question 4 witnesses, only one of whom represents the majority of the scientific community. This along with strict time limits on speaking determine which ideas can be articulated, and restrict opportunities to defend one's statements. The exception is Chairman Lamar Smith, who reserves the right to make comments as he moderates the hearing. There is little to no discussion; the hearing consists of a series of prepared statements and questions for the witnesses. These regulations turn the truth seeking aspect of the hearing into a series of oftentimes disconnected performances.

Because of the prevailing performance of certainty/formality, deviations from this mode are very recognizable. Significant embodied performances included the performance of victimhood and demonization by numerous Congressmen. With wounded and conciliatory tones, they console Curry, Christy, and Pielke for the harassment they have endured at the hands of mainstream scientists and politicians (Lahood 2:17:00). In Rohrabacher's statements (at 1:40:00), he raises his volume and uses reprimanding tones and aggressive gestures/facial expressions to scold and demonize Michael Mann for "attacking" Chairman Smith. John Christy's sad tone and noble refusal to comment any further in an attempt to "forget all that" (Christy 2:18:00) when asked if he has ever felt attacked for his views portray him as overcome with sadness for the state of the debate. Together, these performances validate the concept that there are significant amounts of climate scientists who are silenced. This assists the entire narrative by performing a sense of certainty, and invalidating the field of climate science until it concludes we should get rid of the Clean Power Plan.

The question I sought to answer with this analysis was *"How does performance within the United States Congressional Hearing on Climate Science contribute to audience understanding of the reality of climate change?"* It is my view that performance in this hearing was critical to aiding the narrative constructed by Lamar Smith about the reality of climate science. Without the performance, this narrative would have been noticeably inconclusive. This performance (in restricted time and space) simultaneously moved forward and validated the narrative it was creating. The performance of the hearing created a space in which this incomplete narrative could control the resultant understanding of climate change reality.

This is not to say that performance is inherently obstructive or bad. Without any attached value, performance was undeniably *present* within the hearing, and it would be impossible to sufficiently analyze without an acknowledgement of this.

## 6. Discussion

### 6.1. Conclusions

I started this research with an acknowledgement of the fear in the US that we are losing our valuation over objective truth. The central question to my research as a whole was *"How might an increased consideration of the performance of truth provide a more comprehensive picture of reality?"*

There are many who strive to reduce the truth to scientifically objective facts, and others who may say that the socially constructed nature of these processes renders the information un-objective. I believe the importance of performance within the March 29th Congressional Hearing on Climate Science suggests that rather than attempting to strip down and simplify the truth into objective facts OR disregard the possibility of something being objectively true, an increase in our understanding of the performance of truth will allow us in the end to have a more objective understanding of reality.

These ideas have resonance with a number of other studies. For example, Druckman's 2003 study on the contrasting powers of television and radio in the 1960 Kennedy-Nixon debate shows that viewing television images versus listening to the radio actually does impact audience perception of the information presented (Druckman, 2003). Additionally, Meeren et al's study on perceptions of facial expression and body language shows how intricate human perception of nonverbal communication is (Meeren et al, 2005). Other studies on body language like Albert Scheflen's describe how steeped our kinesthetic behavior is in both our evolution and cultural acquisition. This behavior "maintain[s] and disrupt[s] social orders of all types" (Scheflen, 1972). There are all kinds of embodied performances going around us, and these performances may affect us in unexpected ways. To me, all of this points towards a consensus that there is a great deal to be learned about human performance. We should investigate these areas in order to become more objective.

An objection to my claims I forsee encountering is that while performance may have been important to consider in the setting of a Congressional Hearing, this is because Congress and other political arenas are overwhelmingly performative. In other settings where performance does not dominate the truth seeking processes, the analysis of performance may not be necessary or helpful for objectivity.

However, to this I would say it may be just as important to consider performance in settings where it is not as apparent. Even in scientific processes where traditional objectivity is emphasized above all, there are important points of contact between people. Presentations put on to receive funding, and presentations at conferences explaining research that has been done are just two examples of situations in which people involved take on specific roles that influence their behavior and how they speak about and listen to the information. Additionally collaboration across disciplines requires performance of specific roles as well. Finally, it is useful to consider the performances of power that permeate the entire scientific process. What are the standards that must be met in order to have results that will be accepted as conclusive, and what are the accepted methods of arriving at these results? These performances of power are not in place to obstruct, but rather to make sure our research is productive. The proposed analysis of these performances should therefore not be done with a predetermined goal of critique, but of understanding.

## 6.2. Moving Forward

### 6.2.1. Policy Recommendations

With all of this in mind, I would recommend that Congressional Hearings be constructed in a more evenly bi-partisan manner that allows for a level staging of the hearing. Additionally, I would advise revisions in the time-restrictions and questioning format. Also, for fear of being misunderstood I would like to emphasize that I do *not* suggest attempting to remove performance from hearings or any other process. I hope by now I have shown that this would be a futile task, and it is understanding of the inevitable performances that is important. With this being said, I would suggest that this material be integrated into education systems. This is already done to a certain extent in fields like sociology and performance studies, but I would also suggest a wider application of simulation exercises like mock trials, as well as acting classes where significant time is spent on investigating the motivations and actions of others in order to develop genuine understanding. The purpose of studying and practicing this material on a large scale would not be to give students skills in performative deception and manipulation, but to train them to understand others in terms of performance.

### 6.2.1. Suggestions for Further Research

To move further in this field, more research should be done on the performance of Congressional Hearings, and the effects these hearings have had on US policy. Is it possible to decipher how performance within Congressional Hearings has affected the actual laws and policies we have put in place? Additionally, it would be fruitful to examine the history of Congressional Hearings on climate-change-related concepts to see how they have evolved. As the narrative of each successive hearing changes, how does the performance change?

Outside of the context of hearings, there is endless anthropological, psychological, and sociological work that should continue to be done on how people process information and build truth assertions. To what extent does physical performance control how we perceive the truth of situations? Developing a better understanding of this would be very productive.

## Appendix

      As I mentioned in my introduction, this paper was not the only outcome of my research project. After a semester of work, I started doing parallel work on an original piece of theatre which I ended up titling *Knock Sniff*. *Knock Sniff* was performed on May 16th and 17th in the Fir Acres Black Box by myself and collaborators Evan Howell, Skye Telleen, and Aria Wiedmann. I wanted to explore the themes of my research in an interdisciplinary manner, and communicate my ideas artistically to a wider group of people than just those I encounter in a scholarly setting.

      Starting this process I had a couple important questions: How does one create a piece of theatre relevant to issues of truth, performance and climate change? And how does one create a piece of theatre that has grounding in scholarly research in which I have very specific ideas and suggestions that I want to communicate? Both of these are vitally important and tricky questions because the medium of theatre is not one that lends itself to lecturing or explicating a thesis. Rather than lecturing, what theatre can do is *explore* issues in great depth. This is a delicate process because in order to be successful, one should not *tell* the audience what they think, but rather dig into the emotion and implications of the piece in order to make certain suggestions to the audience. I believe theatre makers need to lay these suggestions just out of reach of the audience so that they must lean forward to access them. However, they should not be left not too far out of reach so that the audience leaves feeling hopelessly bamboozled.

      As I explain in my scholarly summary, performance creates specific spaces for certain narratives to flourish- narratives that are incomplete outside of the performance itself. The performance I wanted to create was one where a huge mess of ideologies, styles, and narratives could exist together, and above all, facilitate the performance of an investigation within the performance itself. This investigation would not be driven through leads and logical clues, but rather through the performances of observation, science, and achievement the characters go through.

      Just like the framework I develop on the performance of truth, I wanted *Knock Sniff* to exist between two worlds (or binaries). One world that was very stylized, musical, and performative (filled with expressive movement that created the performance of an investigation), and another auditory world that suggests that this constructed world is still connected to our current reality- a reality which is dominated by a symphony of media that weaves between satire and harsh truths about climate change, political systems, etc.. However, while constructing these two worlds (visual versus audio, expressive versus real) I also wanted the piece to exist between them, not just in both. As I lay out in my paper, I want to emphasize that performance is not an entity that can be separated from reality. Even while the audience is watching this performance, they are in the room with the performers (performers they know personally). By using the real names of the performers as the character names, I wanted to suggest that the actions seen on stage were not as separated from our reality as a play usually is perceived, and that this absurd

performance is really not all that absurd. The actions on stage were simply actions taken by real people- actions that emphasized the performative nature of our lives.

The creation of these characters was a collaborative process based off of group discussions about the subject material, as well as individual inclinations towards specific forms of expression. I wanted the characters of the show to interact through firm belief systems about truth, and these belief systems needs to be relevant to the themes of our show, and interesting to the individual performers. For example, chemistry major Aria Wiedmann's character was a mad chemist of sorts, whose greatest desire was to make an explosion ("with science… because science DOES. NOT. LIE.") that would expose the truth and "blow the investigation wide open." However, each character has fairly obviously performed flaws in their belief systems that come to the surface in moments of self recognition. I wanted the ridiculous and humorous performances to arrive at moments of genuine frustration, sadness, or hopelessness to mirror the real feelings associated with trying to find the truth through a maze of messy factors, and seemingly hopeless odds. For example, when Evan's methods of close observation (literally pressing his nose against important files) fail him, he "stand[s] defiantly against the world, and scream[s] YOU CANNOT FOOL ME!" as he runs screaming from the room, very much fooled. In the final scene of the show, Aria and myself stand in the midst of the destroyed room with evidence scattered everywhere, and as I lament the idea that all the work we do to find truth "might not matter," Aria laments that "nobody cares," and I am just one more person who has given up on the earnest investigation into finding meaningful truth.

This brings us to the end, which is where I wanted to place a similar suggestion as my general research conclusions. As "Grub" by Monty Alexander once again plays in the final sequence, the characters move through the expressive movements that they have been performing throughout the entire show. However, this time they begin to notice these specific performance within themselves and each other. The movements begin to move the performers, rather than the other way around, and the performers are just along for the ride as they closely observe the performance playing out around and inside them. This gradually carries them each into a corner of the space, where they begin to knock, listen, brush, and sniff their way across the floor towards the rug in the center of the space. The show ends with a collective pulling up of the rug (angled so that the audience is not privy to what the performers find), a moment of discovery, and Evan's final line: "We certainly have a lot of work to do."

My goal was for this final moment to prompt a recognition among audience members that the performers were beginning to understand and situate themselves within the greater performance of the investigation, and it is only by doing this that they can achieve this final moment of true discovery. This discovery is not a reductionist's smoking gun, but a more accurately complex truth that is really just the beginning.

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