

spectra

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COMMUNICATION AND THE ENVIRONMENT



ABOUT spectra

Spectra, the magazine of the National Communication Association (NCA), features articles on topics that are relevant to Communication scholars, teachers, and practitioners. *Spectra* is one means through which NCA works toward accomplishing its mission of advancing Communication as the discipline that studies all forms, modes, media, and consequences of communication through humanistic, social scientific, and aesthetic inquiry.

NCA serves its members by enabling and supporting their professional interests. Dedicated to fostering and promoting free and ethical communication, NCA promotes the widespread appreciation of the importance of communication in public and private life, the application of competent communication to improve the quality of human life and relationships, and the use of knowledge about communication to solve human problems. NCA supports inclusiveness and diversity among our faculties, within our membership, in the workplace, and in the classroom; NCA supports and promotes policies that fairly encourage this diversity and inclusion.

The views and opinions expressed in *Spectra* articles are those of the authors and do not necessarily reflect those of the National Communication Association.

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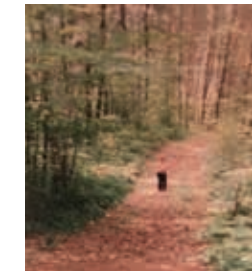
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DID YOU KNOW

On April 17, 2019, NCA will host Energy and the Environment: Communication Challenges, a public program aimed at discussing how communication can help solve and/or contribute to environmental issues caused by energy creation and consumption. The program will be held on the campus of West Virginia University in Morgantown, West Virginia.

Critical Values for NCA

By Star Muir, Ph.D.

Now that my presidency is in play, the die is cast... Let me review some important values, set my tentative agenda, and end on an environmental note. Serving as President of the National Communication Association is at once an honor and humbling. Working as a spokesperson for NCA's mission, representing thousands of members and millions of potential beneficiaries, and presiding over governing processes that are designed to operate with due process and subject to democratic consensus and approval is a daunting proposition. While I do not play at leadership, being serious about forward progress and growth, I try to laugh often, listen well, and play creatively at solving problems.

The first value I have for NCA is to recognize and honor it as a community of very disparate people. From many different walks of life, with a variety of academic and professional interests, NCA members also bring many different passions and avocations to the table, making this a rich community for interaction. I would like to see more opportunities for such interaction outside of our interest group and caucus "silos."

In Salt Lake City, for example, the evening playlist yielded sharing of interests in well-being activities, in playing games, in reading poetry, in watching plays, and in singing songs, while the playspace encouraged participants to share insights and laughter during playful and creative activities. One group met for an off-site basketball game, another organized a field trip to see the Special Olympics training facility. The Newcomer's Reception

was energetic and productive, and the Memorial Session featured heart-felt memories, laughter, and a few tears.

These are the kinds of initiatives and efforts that I value, ones that create space and time for people to find friends and linkages beyond their professional interests that help make the association strong. I've heard it said over the years that the community experience is more appropriate for the regional associations. I do agree in some ways that there are more opportunities for engagement at a smaller conference, but that does not mean the NCA convention needs to be a chaotic or relatively impersonal experience. More chances for our members to develop strong ties and to value the humanity of our convention experiences means improved and stronger member connections, and a better chance for our community to thrive.

A second value for NCA is inclusion. We have a number of initiatives underway that will require focus and commitment to reflect that value as fundamental to our mission as a scholarly association by improving the ways in which we invite, welcome, engage, and sustain a diverse membership. Focusing on safety and harassment issues, the Task Force on Harassment is preparing a report for the Executive Committee that will identify potential ways to reduce risks, increase awareness, and put fair and transparent processes in place. Thanks to the NCA Diversity Council, we have a permanent and strong voice that is creating change, spearheading the anti-harassment statement that now accompanies convention registration, and working with the Publications Council to ensure



Community and inclusion are, for me, critical values that can influence how new members perceive us for the duration of their professional careers, and also can help ensure their willingness to be a part of something that is larger than themselves.

consideration of diversity in the process of securing editors. The Task Force on Inclusivity is completing its final report, which will provide more opportunities to adjust our policies and procedures in support of this value, and the Task Force on Community Colleges will likely have some suggestions about inclusion. All of these initiatives may be a little confusing, but it is the task of the leadership team to sort things out and move important and achievable suggestions forward. Holding to the value of inclusion remains an important challenge for NCA's leadership.

Part of my agenda is to foster these two values as I lead our Executive Committee and Legislative Assembly meetings, which means in part ensuring that the work of our task forces and our councils comes to fruition in a timely way. My agenda also includes, as part of our future thinking, addressing this question: *What should a scholarly association that meets the needs and expectations of our future generations of scholars look like?* At our convention, I love attending the Newcomer's Reception; witnessing the excitement and energy generated by the interactions of budding undergraduate scholars, wide-eyed graduate students, and some seasoned veterans is wonderful. But it is also clear that the rising generations of scholars are evolving and changing how, when, and where collaboration, scholarship, and teaching take place. Over the last ten years, NCA has become more professional and has developed myriad resources, grants, and recognitions fitting for a valued and significant association. But the challenges

facing NCA need more than just professionalism; they need forward thinking about our evolving membership and responsive programs that meet both scholarly and community needs. Community and inclusion are, for me, critical values that can influence how new members perceive us for the duration of their professional careers, and also can help ensure their willingness to be a part of something that is larger than themselves. Let's have some conversation about where we want NCA to be in five to ten years. I'm certainly willing to listen and get the ball rolling!

Finally, let me express great pleasure in this issue's theme of environmental communication. My first love as a scholar, environmental rhetoric and discourse, continues to increase in relevance and importance. In addition to influencing the adoption and implementation of critical policies, environmental communication has become an important focal element in the conflict over societal responses to dramatic ecological imbalances and both slow- and fast-moving disasters. I love the story of John Muir climbing the tree to experience the fury and beauty of the storm, as it reflects some of the power of personal experiences in nature. I worry a bit about youth and their commitment to environmental protection in an era when digital experience is valued so much more than getting out in nature, but I have hope that we can re-forge consensus on the value of our environment and on social and industrial sustainability. Environmental communication will be a critical part of that effort, and a powerful reflection of NCA's external relevance. ■

DATA ABOUT THE DISCIPLINE

NCA Releases A Profile of the Communication Doctorate VI

NCA produces an annual report, *A Profile of the Communication Doctorate*, based on data found in the National Science Foundation's *Survey of Earned Doctorates (SED)*. The 2017 *SED* was released in December 2018, and serves as an update to prior versions of the report.

Highlights from the 2017 *A Profile of the Communication Doctorate* include:

- A total of 54,664 doctorates were conferred by 428 U.S. colleges and universities between July 1, 2016 and June 30, 2017; a total of 626 of those (1.1 percent) were in Communication.
- The top five universities producing Communication doctorates in 2017 were the University of Texas (31), the University of Illinois (19), Regent University (18), the University of Southern California (16), and Michigan State University (15).
- In 2017, 68 percent of Communication doctoral recipients were female. Comparatively, among the social sciences, 40 percent of Political Science doctorates were awarded to females, while 61 percent of Sociology doctorates went to females. In the humanities, 44 percent of History doctorates were awarded to females and 58 percent of doctorates in Letters went to females.
- More than 19 percent of Communication doctoral recipients were temporary visa holders. Of the 463 who were not, 71.2 percent identified as White, 9.9 percent as Black or African-American, 6.3 percent as Asian, 5.6 percent as Hispanic/Latino, and 3 percent as being of more than one race. A total of 17 doctoral recipients reported "other" race or chose not to report race.
- The median time to the Communication doctorate (from start of the doctoral program) was 6.1 years. In comparison, time to doctoral degree for Political Science graduates was 6.4 years, while the median time to degree was 7 years for Sociology, History, and Letters doctoral graduates.

Nearly 50 percent of the 626 Communication doctorates reported "definite employment" as their post-graduation plan. Of those, over 88 percent reported employment in academe, while 6.7 percent reported employment in business or industry.

Communication Doctorates Conferred, 2006–2017



Source: 2017 *SED*, Table 13. Available at <https://nces.nsf.gov/pubs/nsf19301/data>.

PUBLIC PRESENCE

NCA Hosts Anti-Bullying Summit in Salt Lake City

On Tuesday, November 13, more than 60 Salt Lake City community members and health care professionals participated in the 2018 Anti-Bullying Summit, "Bullying: It's Bad for Your Health." Organized by the NCA Anti-Bullying Task Force, which was established during Christina S. Beck's presidency, the event was held at Salt Lake City's non-profit Shriners Hospital for Children.

The Summit included four modules that incorporated communication concepts and techniques that are relevant to identifying and managing bullying behaviors, reducing bullying in workplaces and health care settings, and creating bully-free spaces. Three sessions were designed for hospital staff, administration, nurses, and other health care professionals, and one session was geared toward educators and focused on bullying prevention and intervention for children. Session presenters included Garry Bailey (Abilene Christian University), Carol Bishop-Mills (University of Alabama), Kelly Dillon (Wittenberg University), Stacy Tye-Williams (Iowa State University), Rukhsana Ahmed (University of Albany), and Heather Carmack (University of Alabama).

Materials from the Summit are being shared with health care staff in all 22 Shriners Hospitals, and highlights are being shared at their leadership retreat. Anti-bullying materials, including a video of the Summit, can also be found on the NCA Anti-Bullying Resource Bank at www.natcom.org/advocacy-public-engagement/nca-anti-bullying-resource-bank.



Summit leaders, from left: Garry Bailey, Kelly Dillon, Christina S. Beck, Carol Bishop-Mills, Stacy Tye-Williams, Heather Carmack, and Rukhsana Ahmed.

IN OUR JOURNALS

Etsuko Kinefuchi, "Critical Discourse Analysis and the Ecological Turn in Intercultural Communication," *Review of Communication*, 18 (2018), 212-230.

This article builds on earlier work by the author and S. Lily Mendoza, which argued that critical intercultural communication must go beyond its exclusive attention to anthropocentric concerns and begin to approach identity, culture, and intercultural communication from an ecologically grounded perspective. The essay discusses the potential role of Critical Discourse Analysis (CDA) in making this shift. Kinefuchi indicates that recent CDA work has focused on topics such as nature and the environment, investigating such subjects as news media discourse of climate change, greenwashing, and ecolinguistics. By articulating ecolinguistics as CDA, the author suggests that CDA has already begun to take an ecological turn and posits that while CDA and intercultural communication can work together to analyze and articulate destructive narratives, they can also be used to advance alternative narratives that provide a means of remembering the "indigenous self" and one's connections to the planet.

Yuhua (Jake) Liang, Kerk F. Kee, and Lauren K. Henderson, "Towards an Integrated Model of Strategic Environmental Communication: Advancing Theories of Reactance and Planned Behavior in a Water Conservation Context," *Journal of Applied Communication Research*, 46 (2018), 135-154.

This study analyzes strategic communication in the context of environmental issues. Liang, Kee, and Henderson focus on the effects that water conservation campaigns and messaging have on the

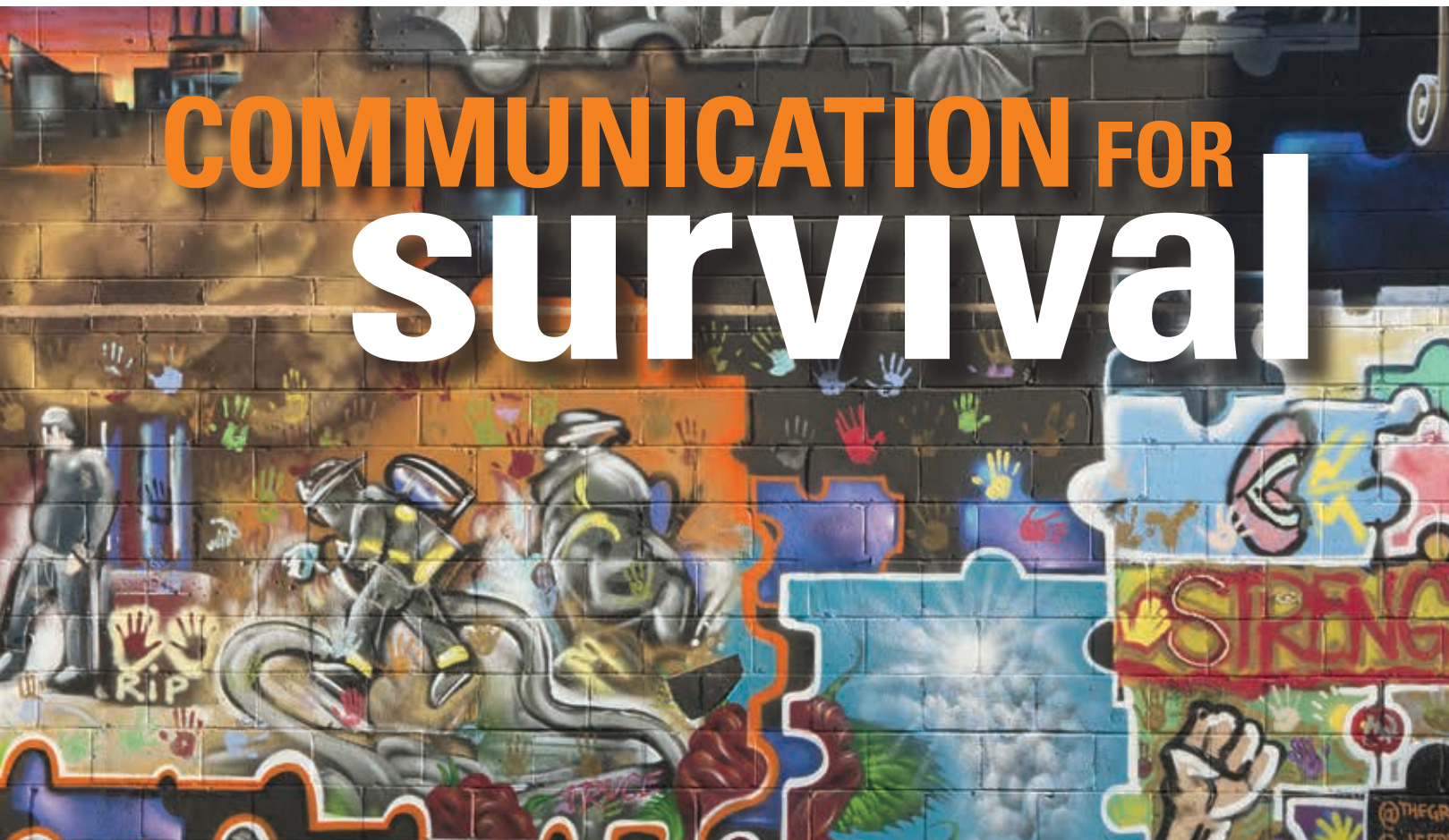
public. Results of their study reveal that water conservation messaging is effective when it is presented to an audience as voluntary and non-threatening to their sense of personal freedom. Messaging that lists basic water conservation tips is also beneficial, as it provides the receivers with options that do not inhibit their sense of freedom. Further, the message receiver is more likely to conserve when provided with factual evidence of the consequences if no action is taken. The authors suggest that practitioners promote water conservation as a social norm, as receivers have a more favorable outlook on conservation when they believe it to be a common behavior. The authors stress the importance of this type of strategic messaging in addressing large-scale issues that require the public's participation.

Catalina M. de Onís, "Fueling and Delinking from Energy Coloniality in Puerto Rico," *Journal of Applied Communication Research*, 46 (2018), 535-560.

This article examines discourse around Hurricane Maria's 2017 landfall in Puerto Rico and presents experiences with energy coloniality and energy privilege. The author describes how the rhetorical strategies employed during the emergency response serve to uphold neoliberal and colonial systems. This essay also highlights four rhetorical problems of the 2017 hurricane season related to "natural" disasters, rebuilding, resilience, and experimentation. The author implores the reader to consider the sociological, political, and economic implications of such language and explores alternatives to energy coloniality and energy privilege.

SAVE THE DATES!

November 14–17, 2019 • Baltimore, Maryland



COMMUNICATION FOR survival

IN 2019, the National Communication Association's 105th Annual Convention will be held in Baltimore, MD. The largest city in Maryland, Baltimore is rich with abundant cultural opportunities, educational resources, and a thriving urban space. Sessions will take place near the Inner Harbor, a vibrant and beautiful waterfront, home to such renowned attractions as the National Aquarium as well as a variety of restaurants.

The convention theme, "Communication for Survival," is designed to help inspire us to think about the ways communication improves lives, helps people build relationships, sustains communities, changes society for the better, and provides peace of mind. Join us in considering the ways communication can help people and the planet to survive.

Plan now to attend!

www.natcom.org/convention

AN INTRODUCTION



COMMUNICATION AND THE ENVIRONMENT

As this issue of *Spectra* nears completion, a polar vortex has overtaken much of the country, with many in the Midwest and New England experiencing record-breaking temperatures. A slew of articles blames this latest weather phenomenon on climate change. Certainly, for some time now, weather-related phenomena, from hurricanes to wildfires, have been increasing in both frequency and intensity. And, climate change is just one of the many environmental challenges we confront.

Many Communication scholars are working to improve environmental communication in the public realm, where communication is often unclear, untrue, or unappreciated. These scholars strive for communication that is grounded in research and employs the most effective communication strategies, so that policy makers are armed with as much accurate information as possible when crafting potential solutions.

In the pages that follow, the authors focus on what the Communication discipline is doing and can do to address our globe's myriad environmental challenges. They display a rare combination of deep commitment, expertise, and solutions-oriented practicality, all relying on their intimate knowledge of communication research to address this issue of *Spectra*'s special focus on "Communication and the Environment."

Casey Schmitt opens the issue with a call to action directed toward Environmental Communication scholars. "It is on us," Schmitt writes, "not only to ally with and passively support our causes, but also to take action for ourselves, by educating, agitating, and enforcing through our expertise." Referring to a childhood spent exploring the wilderness, Schmitt describes "a lifelong fascination with how human communication about the environment has literal, physical repercussions for the environment

itself, and how individual and group interactions with that physical environment and its changes, in turn, affect how humans communicate about and within it."

Drawing on the research published in their recent book, *Under Pressure: Coal Industry Rhetoric and Neoliberalism*, Peter K. Bsumek, Jennifer Peebles, Jen Schneider, and Steve Schwarze offer a fascinating analysis of the rhetorical strategies used by the coal industry, the current administration, and others to bolster the industry's argument that continued reliance on fossil fuels is necessary for the country's ongoing sustenance.

The devastating effects of environmental destruction are keenly felt, particularly by Native Americans. "From the perspective of environmental rhetoric," Danielle Endres writes, "Native American and First Nation environmental justice movements constitute a robust and complex site for analysis." Endres highlights some of the Communication research being done in this area, noting that "[t]he time has come for rhetorical scholars to find more ways to engage with the issues that matter to indigenous communities, including environmental issues."

Finally, Rosie Jahng discusses how using social media can help scientists share important information, especially during crises that require public engagement. Jahng studied the Twitter efforts initiated by Flint Water Study scientists, lauding the scientists for their valiant work in disseminating information via the popular online platform. To provide scientists with a blueprint that can help with ensuring their social media work is as effective as possible, Jahng offers specific steps that allow scientists "to develop a more thorough and meaningful crisis communication strategy without compromising their scientific work."

We hope you enjoy the passion and practicality conveyed by the authors in this special issue of *Spectra*. ☪

COMMUNICATION AND THE ENVIRONMENT:

A CALL TO ACTION

By Casey R. Schmitt, Ph.D.

There was a plot of overgrown public land near the home where I grew up, where a shallow creek meandered through the trees and where I spent days and days each summer in what, to me at the time, felt like an essential natural wilderness. I swung from branches, burrowed in the dirt, swam in the water, and puzzled over animal tracks with my friends.

Then, something happened. The city installed a new sign, labeling the space as a “nature preserve.” City workers posted preserve space rules and regulations, installed trash bins, and cleared out brush so people

could pass through the area more easily. They told visitors to stay on the trails and respect nature. I was furious. I remember I went home one day, huffing and puffing to my parents about how the city had spoiled nature and how, by cutting down a few trees here and there in the name of preservation, they’d ruined my wild backyard. My parents shrugged. To them, this was no great assault. Quite frankly, I don’t know that either of them had ever thought of the overgrown patch as “nature” before the signs had gone up. They tried to calm me, but I was suspicious.



The author playing in the natural wilderness as a child.

I spent days and days each summer in what, to me at the time, felt like an essential natural wilderness. I swung from branches, burrowed in the dirt, swam in the water, and puzzled over animal tracks with my friends. Then, something happened.

A few months later, because the space was a preserve, a blacktop paved trail and wooden bridges went in, where visitors could pass through unobstructed, to enjoy their surroundings. This didn’t sit well with me. After a few more years, because the land was now zoned as a recreational trail space, portions of my wilderness could justifiably be cleared for other forms of recreation. Trees came down, and a soccer field went in. Within a few more years, those fields sat muddy and unused, and, as the land was now vacant park space rather than untouched nature, the city could rezone it once again,

and a commercial center was installed. I wondered how this had happened. How had labeling something as “nature” led to it becoming a strip mall and a parking lot? The label, I figured, was a powerful tool, to be used for ecological protection or, conversely, for degradation.

That was my entry into a lifelong fascination with how human communication about the environment has literal, physical repercussions for the environment itself, and how individual and group interactions with that physical environment and its changes, in turn, affect how humans communicate about and within it.



THE CURRENT CLIMATE

Recent years have made the relationship between communication and the environment all the more visible and urgent at the local, national, and global scales. A series of well-reported and traumatic events has left us wondering how even well-meaning human actions, discourses, and frames have failed to prevent—and sometimes have contributed to—spectacular changes in the biophysical landscape; in the safety of air, land, and water to human and other forms of life; and a marked rise in unprecedentedly destructive storms, floods, droughts, and fires—the *unnatural* disasters that have marked a young century. In 2014, contaminated drinking water from the Flint River in Michigan exposed families and children to elevated lead levels and Legionnaires' disease. In 2017, a catastrophic hurricane season, including landfalls from Hurricanes Harvey and Maria, resulted in more than 3,000 deaths and over \$280 billion in damage. In 2018, the Camp Fire became just the latest in a series of nearly annual “largest” and “most destructive” wildfires in U.S. history. The current day exigencies posed by changes in global and local environments demand immediate response, and those responses highlight the essential role of communication in environmental action.

At a time of widely and often infuriatingly varied assertions of realities and causes, of interpretations devoid of evidence, of disinformation, of equivocation and deliberative stalemates, environmental challenges have surpassed deniability. Forests are on fire. Icecaps are melting. Fossil fuel resources are being exhausted, and future sources are more difficult to extract. Infrastructure is aging. Urban development and animal habitats encroach on one another. Plants, animals, and people are sick and dying.

These developments are frequently overwhelming and receive varied responses. At the global level, the United Nations' Paris Agreement has acknowledged the human role in spurring global climate change and developed a human response to reduce greenhouse gas emissions from industrial, agricultural, and personal consumption. Yet the United States has announced its withdrawal from the agreement. Under the current U.S. administration, the human communication response to environmental exigence has been one of re-writing definitions and frames, changing the criteria for what qualifies as “endangered” species or “protected” wilderness. At the end of 2018, the U.S. Environmental Protection Agency and Department of the Interior—despite ongoing scandals and high-level resignations—were working to reclassify designations for

In the current moment, the realities are harsh and their enormity hard to comprehend, but the burgeoning field of Environmental Communication is well-positioned to address and respond to them.

high-level nuclear waste and aspects of the Clean Water Act, not to address any changes in the physical repercussions of waste materials, but to ease the strain of adhering to rules and regulations. Here, as in my childhood wilderness, the terms and labels applied by human actors have direct repercussions on the environments themselves.

Still, environmentally responsible and conscious discourses are also on the rise. Terms such as *sustainability* and *renewable energy* have entered the common vocabulary. Young people are using activism, oratory, and social media to raise ecological awareness. Looking toward future generations, climate activists, educators, and others are coming to understand humans as especially agentive players in the Anthropocene era while ultimately still just part of a larger, interconnected system that extends both within and beyond the human. Calls for environmental justice recognize that often the most vulnerable, poorest, marginalized, and otherwise impoverished groups bear the heaviest burdens and costs of environmental changes. These calls see communication as a tool for spreading awareness, empathy, and plans for action in the coming years.

In the current moment, the realities are harsh and their enormity hard to comprehend, but the burgeoning field of Environmental Communication is well-positioned to address and respond to them.

WHAT IS ENVIRONMENTAL COMMUNICATION?

Environmental Communication (EC) is a perspectival shift in how to understand, discuss, and engage in communication. It especially considers symbolic exchange, persuasion, meaning-making, and discourse as *situated processes*, and thus attends especially to the physical environments in which these communication events emerge and develop.

EC recognizes that communication shapes and articulates places and contexts, but also that communication is itself shaped and articulated by those places and contexts.

EC as a discipline pays special attention to the ways symbolic exchange and discourse affect the biophysical environments in which they take place. It attends to the most pressing environmental changes, challenges, and threats of the current time. At present, that includes questions surrounding climate change discourse, environmental racism, food justice, resource framing and management, natural disaster and risk communication, disease and population control, public education and advocacy, historical re-evaluations of our environmental heritage, alternative energy narratives, and the burgeoning field of more-than-human rhetorics and ecologies, all with a common focus on the intersection of communication and the environment.

At the same time, EC also explores how biophysical and human-crafted environments themselves symbolize, persuade, contribute to meaning, and interact dialogically with the human and non-human subjects that move within, aside, and about them.

In short, Environmental Communication focuses on how we communicate (or fail to communicate) with and about the biophysical environment, but also, and equally, how the biophysical environment communicates (or fails to communicate) *with us*.

ENVIRONMENTAL COMMUNICATION'S COMMITMENTS

The current day is a paradoxical moment in the field of EC. On one hand, as a community and field of study, we have never been stronger, more unified, or more prolific. Our community, as a sphere of collaboration for academics, educators, activists, and ecologists, is a vibrant one. On the other hand, this community is living through unprecedented challenges to the conscious and ethical commitments to environmental sustainability that have guided our work, appeals, and research since the sub-discipline's inception. The institutions entrusted with



the highest authority to promote sustainable practices, thriving biophysical environments free from pollution, and honest public discourses about energy and resource management have dismissed the voices of researchers, advocates, experts, and the on-the-ground communities who live with the repercussions of our society's most environmentally destructive practices. Climate changes; sea levels rise; antibiotic-resistant bacteria spread; air quality plummets; plastics clog the oceans; contaminated tap water scars, sickens, and kills children; and land is seized from indigenous peoples and transferred to fast-tracked industrial projects in spite of public outcry.

In 2019, as a result of this tension between progress and threat, the National Communication Association (NCA) and EC are hearing a call to action. We are inspired by the grassroots and bootstrap efforts of K-12 schools, universities, non-profits, volunteer programs, community centers, indigenous rights groups, and future-conscious for-profit corporations and industries who have taken it upon themselves to no longer rely on national, power-wielding authorities to promote and enact environmental sustainability and ethics. It is *on us* not only to ally with and passively support our causes, but also to take action for ourselves, by educating, agitating, and enforcing through our expertise. We are making use of our insights and our networks to not only espouse the merits of ethical, sustainable environmental communication, but also to enact them ourselves, for our communities, for future generations, and for the planet.

Environmental Communication must be an action-oriented community, even when exploring the historical, engaging in criticism, and parsing out the theoretical and abstract.

The mounting list of public and perceived threats to the global environment can, at times, seem paralyzing. Environmental Communication must be an action-oriented community, even when exploring the historical, engaging in criticism, and parsing out the theoretical and abstract. We must speak out, seek out communities with shared allegiances, and build coalitions to ensure that our conferences, conversations, and publications contribute to the cause of sustainability amid the current global, national, and local threats.

SOLVING (AND PERPETUATING) ENVIRONMENTAL CRISES

Environmental Communication is a crisis discipline that deals in response to imminent physical and social demands. Its goal is ensuring sustainability, equity, and continued exchange.

The effort to attain this goal involves the work of journalists, non-profits, policymakers, activists and protestors, local communities, educators, students, and university staffs. It is an interdisciplinary field, drawing from Rhetoric, Media Studies, and Communication Science, but also from Environmental Studies, Biology, Geography, Chemistry, Sociology, Psychology, and Political Science.

How does communication strive to solve the environmental threats before it? By identifying the issues at hand, educating the population, dispelling misinformation, deliberating, instituting policies and addressing the problems that remain, mobilizing communities in networks of shared commitments, and planning for the future, down through the seventh generation and beyond.

And we must be conscious of how our actions and even our presence can at times perpetuate the challenges, as well. Like those city planners who posted signs in my hometown woods, we must recognize that efforts toward environmental stewardship can sometimes do as much

The primary lessons of the Anthropocene era have all warned human communities against hubris, and these lessons apply as much to communication, journalism, and education as they do to capital, empire, and industry.

harm as good. Our means of communication, for example, including the digital media that have facilitated mobilization and coalition, are themselves dependent on industry and mining and fossil fueled transportation. It would be foolish to neglect our own role in consuming physical resources and disrupting the balance of the global ecosystem. The primary lessons of the Anthropocene era have all warned human communities against hubris, and these lessons apply as much to communication, journalism, and education

as they do to capital, empire, and industry. The frames, terms, and labels we use to guide our conceptions of and actions within the environment have slow but long-lasting effects on that environment. We cannot be too careful or too cognizant of this responsibility.

I am grateful and heartened that the NCA has dedicated this issue of *Spectra* to these concerns, to the ongoing crises of the more-than-human environment, and to communication's role within them. ■



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THE COAL INDUSTRY'S *Rhetorical Playbook*

By Peter K. Bsumek, Ph.D., Jennifer Peeples, Ph.D., Jen Schneider, Ph.D., and Steve Schwarze, Ph.D.



Note: The authors have published several articles and a book on public controversies about coal and the rhetoric of the coal industry. The book is entitled Under Pressure: Coal Industry Rhetoric and Neoliberalism (2016).

Even during incredibly busy news cycles, it was impossible to ignore the stunning succession of climate change reports released during the latter half of 2018. Each confirmed the same devastating message: The world is not doing enough to slow the consumption of fossil fuels or the emission of greenhouse gases.

The International Panel on Climate Change has reported that the most devastating effects of climate change—serious food shortages, massive health crises, species extinction, and mounting natural disasters—will happen much faster, and be more serious, than previously predicted. In addition, the United Nations Environmental Program has reported that most countries are not on track to meet the emissions goals set in the Paris Agreement.



In the United States, the Trump administration's National Climate Assessment warned about the dire economic and public health costs of continuing to burn fossil fuels. Yet the President—widely known as being a climate skeptic—dismissed the report's findings. Under Trump's leadership, the country has announced it will withdraw from the Paris Agreement, reversed the EPA's Clean Power Plan, and rolled back a spate of environmental laws and standards intended to address greenhouse gas emissions. The administration's energy policy, framed as "energy dominance," explicitly privileges fossil fuel development.

Coal has played a starring role in the administration's energy and climate drama. Even though the industry is widely believed to be in long-term decline, Trump

claims to have "ended the war on coal" and asserts that the industry will come "roaring back." For the President, propping up coal is a symbolic act. But it will have significant material consequences, not the least of which is the continued release of nitrogen oxides, sulfur dioxide, particulate matter (PM), and mercury into the environment, causing upper respiratory disease and premature death. Trump's action repudiates the Obama administration's environmental legacy, endorses the dominance of fossil fuel interests over environmental and public health concerns, and boosts coal in its struggle to sustain market share relative to natural gas.

Our research on coal industry rhetoric identifies *five rhetorical strategies* the coal industry uses to negotiate its precarious position in the American energy landscape.

Asserting that there is a “war on coal” allows the industry to blame environmentalists and environmental regulations for its decline, rally support from coal-dependent workers and communities, and argue for continued governmental support, in the form of bailouts, subsidies, and deregulation.

Notably, these strategies are distinct from the rhetoric of climate change skepticism and denial. The so-called “tobacco strategy,” manufacturing scientific uncertainty and controversy, has been well-documented. The strategies we analyze differ in that they are deployed by industry to complement, amplify, enable, and eventually replace denial and uncertainty. We analyze how the industry uses apocalyptic threats, often derided as an environmental rhetorical tactic, to argue for the coal industry’s economic necessity. We look at how the industry manufactures grassroots support, all the while working to undermine collective action that might challenge its legacies of social and environmental injustice. We also examine how the industry uses terms such as “clean coal” and accusations of hypocrisy to buttress the federal subsidies it needs to survive, while at the same time thwarting the federal government’s attempts to regulate it. And finally, we look at how the industry positions itself as a moral hero, able to single-handedly address worldwide energy poverty. Each of these rhetorical moves has been adapted by other industries when faced with similar regulatory and market challenges.

INDUSTRIAL APOCALYPTIC

For over a decade, the coal industry has worked to convince Americans that it is under siege, that there is a “war on coal.” In truth, it is an industry that is increasingly “under pressure”: Coal production has fallen to historic lows and shows little signs of rebounding, particularly in the face of cheap, abundant supplies of natural gas. The number of coal miners in the United States has been in steady decline for decades, and many historic coal-mining communities have been hit hard by the downturn.

In addition, high-profile coal companies, such as Peabody Energy and Westmoreland Coal Co., have recently declared bankruptcy. Hundreds of coal-fired power plants have been shuttered, thanks to unfavorable economic conditions and the efforts of environmental campaigns such as the Sierra Club’s Beyond Coal. And,

potentially the most damning for the industry’s future, many utilities are not building new coal plants, choosing instead to invest in natural gas and renewables.

The industry and its political allies have cast this situation in apocalyptic terms to solidify their position. Asserting that there is a “war on coal” allows the industry to blame environmentalists and environmental regulations for its decline, rally support from coal-dependent workers and communities, and argue for continued governmental support, in the form of bailouts, subsidies, and deregulation. Claiming that it is “too big to fail,” Big Coal argues that if the industry is allowed to collapse, then the nation itself will be at risk for economic and energy catastrophe.

For example, Department of Energy (DOE) Secretary Rick Perry directed the National Energy Technology Lab to release a report during 2018’s “Bomb Cyclone” weather event indicating that decreasing coal production could “have an adverse impact on the nation’s ability to meet power generation needs during future severe weather events.” To put it even more starkly, Murray Energy CEO Robert Murray argued that people would “die in the dark” if coal declined. As a result of this and other vulnerabilities, DOE has argued, the federal government should consider stockpiling the fuels—essentially creating a federally funded market that would prop up coal, using taxpayer dollars.

CORPORATE VENTRILOQUISM

Coal also enlists a wide array of voices to speak in ways that advance its interests. We call this corporate ventriloquism. Corporate ventriloquists create “dummy” organizations, websites, or other means of communication that imply widespread community engagement and support. Individual Americans may be members of these organizations—and certainly plenty of Americans *do* support coal mining. However, corporate ventriloquist efforts are propagated by the industry. They are made to seem grassroots when they are not, and they enable corporations to cast themselves as citizens.

We see the hypocrite’s trap used against environmental activists—and especially against young people fighting for climate action—with alarming frequency. The hypocrite’s trap is a rhetorical move that seeks to silence climate activists by highlighting their consumption of fossil fuels.

Coal’s ventriloquism has taken the form of campaigns and organizations such as Friends of Coal, a West Virginia-based advocacy group, and America’s Power, a coal industry trade association, to emphasize the monolithic support the coal industry claims to enjoy among everyday Americans. These campaigns regularly feature photos of individuals from all walks of life, accompanied by language and images that resonate with American symbols and traditional values: the flag, families, and freedom. At the same time, their member lists feature coal trade associations and local Chambers of Commerce. With slogans such as “Coal is West Virginia! Coal is America!” these groups provide the industry with “one voice” that unequivocally supports coal.

Since the rise of company towns in coal country, the industry has found it in its interest to blur the lines between corporations and citizens, and to encourage audiences to believe that what is best for corporations is best for them. Corporate ventriloquism enables the industry to circulate industry-friendly messages; create community, identity, and belonging; and make pro-coal positions appear to be popular and “common sense.” This strategy works in tandem with industrial apocalyptic to create a reactionary populist alliance among coal miners, coal-dependent communities, and corporations that are resistant to alternative energy and economic systems.

THE TECHNOLOGICAL SHELL GAME

If you’ve followed American energy politics long enough, you’ve certainly heard of “clean coal.” The industry has invoked the wonders of clean coal in the past—with dust abatement in the 1920s and the acid rain controversy of the 1970s and ’80s, for example—and now argues that technologies such as carbon capture and sequestration (CCS) are within an arm’s length of being developed. The shell game ensues when the industry uses strategic ambiguity to suggest that past efforts to “clean coal” are proof that effective CCS technologies are coming in the near future. CCS promises to all

but eliminate coal’s greenhouse gas problem, and the industry often points to CCS to stave off the threat of environmental regulation in favor of private innovation.

One industry PR campaign ramped up this appeal by dispatching “clean coal branded teams” during and after the 2008 presidential campaign to elevate the importance of “clean coal” and build support for CCS as part of cap and trade legislation. Of course, CCS has proven to be technically challenging and expensive. Some forms of “clean coal”—such as requiring that “scrubbers” be put on smoke stacks to cut down on fine particular pollution—have been only marginally effective. And while the industry has been happy to accept federal funding for these technologies, it has fought regulations that might require them at every step.

By 2014, in fact, the industry position changed again; the EPA found CCS to be a feasible technology for carbon emission reductions, while industry blamed the government for not providing adequate funding to develop an effective form of clean coal. Thus, the shell game: The industry calls on clean coal when it suits its interests, and declares clean coal a technological pipe dream when it does not.

THE HYPOCRITE’S TRAP

We see the hypocrite’s trap used against environmental activists—and especially against young people fighting for climate action—with alarming frequency. The hypocrite’s trap is a rhetorical move that seeks to silence climate activists by highlighting their consumption of fossil fuels.

The trap also can ensnare celebrity spokespeople who speak out about climate change. For example, industry advocates pointed out that the electricity used to heat former Vice President Al Gore’s swimming pool, “would power *six homes* for a year.” Similarly, a *New York Post* article titled “Why Leo DiCaprio is just another climate hypocrite” referenced his six private flights in six weeks. The trap snaps: How can one call for the phasing out of coal when one relies so heavily on fossil fuels?



The trap makes activists seem naïve about energy markets and their own complicity in the fossil fuel economy. It places activists in a double bind by shaming them as hypocrites if they utilize fossil fuels, while positioning them as too extreme to be persuasive to mainstream audiences if they are able to strictly limit their fossil fuel consumption. This strategy deploys a realist style of rhetoric and portrays climate activists as fanciful dreamers who are disconnected from how the real world—specifically, the economy—functions.

For example, in 2018, members of the Sunrise Movement, an emergent climate movement calling for a “Green New Deal,” challenged Pennsylvania gubernatorial candidate Scott Wagner about his stance on climate change during a town hall. In response, Wagner called one woman who asked a question “young and naïve,” later explaining that he didn’t find calls to switch to renewables “realistic.” The episode went viral when the movement posted a video of the exchange and turned the comment on its head with a “#youngandnaive” hashtag.

As historian Naomi Oreskes has pointed out, we can critique untenable social and economic systems, even if we also are locked into them ourselves. But the hypocrite’s trap is an effective rhetorical tool for industry

advocates because it positions them as clear-eyed and realistic, and the activist as clueless and idealistic, shutting down debate and discouraging action.

ENERGY POVERTY/ENERGY UTOPIA

Although coal struggles in the United States, worldwide it is thriving due to growing demand in industrializing countries. The Trump administration has attempted to access these markets under an “energy dominance” approach that includes increasing U.S. energy exports. Indeed, for a short period in 2018, the United States became a net exporter of petroleum products, and Trump has indicated he would like to see the same for coal.

Although Trump’s energy rhetoric aligns with an “America First” ideology, the pump for exporting American coal abroad was largely primed by what we call energy poverty/energy utopia rhetorics. Energy poverty argues that people in other countries need our cheap energy for economic development; energy utopia envisions Western consumerist lifestyles as a desirable future for the world’s poor.

Peabody Coal crafted an entire publicity campaign based on this strategy. The campaign positions coal as helping countries seamlessly transition into industrialization and modernity. This runs counter to complicated questions

concerning energy justice and climate change, issues clearly being played out in countries such as China, where persistent air pollution caused by coal burning has led to mass protests and public health emergencies.

DOE Secretary Rick Perry stretched the energy poverty argument when he contended that having coal-fired electricity would probably prevent sexual assault in developing countries. A young African girl had reportedly told Perry she was forced to study by firelight. Using

utopian, even religiously toned language, Perry reflected, “But also from the standpoint of sexual assault. When the lights are on, when you have light that shines, the righteousness, if you will, on those types of acts.”

Though coal production is at its lowest level in decades, the coal industry hangs on using these rhetorical strategies as a playbook for convincing a skeptical American public and a potentially interested global audience. It may be a dying industry, but it will not die quietly. ■



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Engaging the Nexus of Environmental Rhetoric *and* Indigenous Rights

By Danielle Endres, Ph.D.

In one of his final presidential acts, President Barack Obama created the Bears Ears National Monument on December 28, 2016, designating more than 1 million acres of federally protected land situated in southeastern Utah and bordering the Navajo Nation. The proposal to create the Bears Ears National Monument was instigated and promoted by a coalition of five Native American tribes—Diné, Hopi, Ute Mountain Ute, Ute, and Zuni—all of whom claim cultural and sacred connections to the land. The Bears Ears Inter-Tribal Coalition noted on its website that Obama’s designation of the monument “protected Native American ancestral lands that remain integral to our history, identity, and cultures today. Many Native people continue to hunt, gather medicinal herbs, and conduct ceremonies in the Bears Ears, as our ancestors have done since time immemorial.”

The creation of Bears Ears is significant for indigenous rights, not only because it was the result of a grassroots effort by Native American peoples, but also because it was the first time that a coalition of Native Americans invoked the 1906 Antiquities Act to request protection of indigenous sacred sites. Bears Ears has also been celebrated by local and national environmental and conservation organizations for its protection of wild natural lands. Yet, as one might imagine, the creation of the Bears Ears National Monument remains controversial. In addition to drawing resistance from rural Utahns and government officials uneasy with what they viewed as federal overreach, there were also vocal opponents of the proposal within the Diné people. In December 2017, President Donald Trump reacted to partisan grievances with the monument and reduced it by approximately 85 percent, to just over 200,000 acres.



Civil disobedience in protest of nuclear testing at the Nevada Test Site.

From the perspective of environmental rhetoric, Native American and First Nation environmental justice movements constitute a robust and complex site for analysis.

The controversy over the Bears Ears National Monument illustrates the nexus between indigenous rights and environmental protection. Indigenous communities in North America engage in decolonial struggles to protect their homelands, preserve cultural connections to the environment, make sovereign decisions about environmental issues, prevent toxic pollution, and resist treatment of their lands as national sacrifice zones. While the post-1492 history of the North “American” continent is ripe with examples of these struggles, the 20th and 21st centuries saw fights to preserve Lummi rights to salmon fishing in the Pacific Northwest, harvest pine nuts in Western Shoshone lands near Yucca Mountain, stop tar sands pipelines from endangering First Nation communities in Canada (#idlenomore), and prevent the Dakota Access pipeline from polluting water (#NODAPL). In these struggles, Native American and First Nation people fight against powerful corporate and governmental interests and systems of racism and colonialism.

These struggles are not only based in decolonization, self-determination, and sovereignty, but also are linked with environmental and ecological values and motivations. Of course, not all indigenous people are environmentalists, nor do they all hold inherently ecocentric values. Yet, within many of the indigenous communities in North America, efforts to protect indigenous rights are interrelated with ecological preservation and environmental justice. Organizations such as Honor the Earth and Indigenous Environmental Network explicitly seek to join indigenous rights with environmental protection, promote strategic coalitions with non-Native environmental groups, and share wisdom from successful campaigns across indigenous communities.

From the perspective of environmental rhetoric, Native American and First Nation environmental justice movements constitute a robust and complex site for analysis. Yet, the field has been slow to undertake this research. In

an article in *Review of Communication*, Phaedra Pezzullo has argued that environmental rhetoric has been marginalized within rhetorical studies. Within environmental rhetoric, studies of environmental (in)justice are further marginalized. And, within environmental justice rhetoric, there is a small but substantial body of work focused on indigenous environmental issues. Put simply, we need more scholarship that investigates the many environmental controversies involving indigenous communities. In the next few paragraphs, I will highlight some examples of current research and then introduce some directions for future research. Although I will focus primarily on indigenous environmental struggles in North America, it is important to recognize that the nexus between indigenous rights and environmental rhetoric is also a global phenomenon that our internationalizing discipline should address.

In a book chapter in *Voice and Environmental Communication*, Casey Schmitt (also the author of the opening article in this issue of *Spectra*) examined how the Ecological Indian frame, which stereotypically assumes that all Native Americans are closer to nature and inherently more environmentally conscious than non-indigenous people, might be tactically employed by indigenous environmentalists as a way to gain voice. His analysis of the rhetoric of Winona LaDuke, executive director of Honor the Earth, demonstrates how: “while Native American voice may be silenced elsewhere, it is both expected and encouraged when spiritual reverence to and knowledge of the natural environment are involved,” creating a space in which indigenous voices may actually be “exceptionally acknowledged.”

Taylor N. Johnson examined the phenomenon of nuclear colonialism as related to the Nevada Test Site (now known as the Nevada National Security Site), where more than 1,000 nuclear bombs were tested on the treaty-recognized homeland of Western Shoshone people (*Atlantic Journal of Communication*). Her more recent



work focuses on how Native Americans tactically enact sovereignty, challenge U.S.-centric notions of citizenship and publicity, and engage with modes of environmental decision-making in the Dakota Access Pipeline and Bears Ears controversies.

Anthony Sutton’s book chapter in *Decolonizing Native American Rhetoric* reports on his engagement as a “critic, farmer, and partner” with the Aroostook Band of Micmac as they advocated for food sovereignty, traditional food systems, and environmental justice. Sutton argues that his method of using “presence and supportive research became a way to help more towards decolonizing food systems and research” than other forms of rhetorical research that may not be supportive of sovereignty or tribal initiatives.

Although much of the work in the field has focused on Native Americans and First Nations, in a series of essays, Tara Na’puti highlights the environmental issues facing

indigenous communities in the Pacific Islands. Na’puti’s fieldwork and advocacy in Guåhan focuses on how indigenous Chamorro people resist and survive amidst the environmental injustices, loss of land, and affronts to sovereignty within a colonial history and present of military buildup and ecological destruction on the island.

Finally, at its most recent convention, NCA partnered with the Waterhouse Family Institute for the Study of Communication and Society to present a plenary session focused on the Bears Ears controversy and other environmental justice issues facing indigenous communities in the American Southwest. At this session, rhetorical scholars joined with representatives from the Utah Division of Indian Affairs and Utah Diné Bikéyah to explore possibilities for how the field might engage more with indigenous environmental justice issues. Taken together, these projects highlight a number of already

In interdisciplinary environmental and indigenous studies research, there is a robust scholarly conversation about “traditional ecological knowledge.”

Rhetorical analysis of the tactics that... environmental groups use would greatly expand our understanding of the ongoing dynamics of indigenous rhetoric, social protest, and advocacy.

existing productive areas for research at the intersection of indigenous rights and environmental rhetoric. Next, I turn to some future directions. This is by no means an exhaustive list, but one that features the richness of this area of research.

First, in interdisciplinary environmental and indigenous studies research, there is a robust scholarly conversation about “traditional ecological knowledge.” The term describes ways of knowing that are based in long-standing connections to particular places, intimate knowledge of animal and plant life and ecological systems based on direct contact with the environment, and indigenous epistemologies. Scholars such as Vine Deloria, Jr., Jace Weaver, Greg Cajete, and Megan Bang have described historical and contemporary ecological

belief systems across many of the more than 500 distinct Native American cultures that are characterized by intimate intersubjective relationships among humans, more-than-human beings, and environments.

Traditional ecological knowledge is often presented in opposition to Western epistemologies, especially Western scientific knowledge. While this represents an important move toward recognizing and involving indigenous perspectives and communities in sustainability-oriented research and land-management, the concept is contested. On one hand, traditional ecological knowledge acknowledges that many indigenous people hold forms of knowledge that can contribute to environmental protection and management, which is a significant improvement over situations in which indigenous

perspectives are silenced or marginalized. On the other hand, the concept risks overgeneralizing the diversity of Native American beliefs into one concept, essentializing indigenous people as inherently ecological, and reinforcing the ecological Indian or noble savage stereotypes. Given that critical analysis of phrases as both representative and constitutive is rhetoric’s bailiwick, a rhetorical examination of traditional ecological knowledge, the way it frames indigenous communities’ relationships to the environment, and the consequences for indigenous communities’ struggles over their land would not only advance scholarship in environmental and indigenous rhetoric, but also could contribute to interdisciplinary scholarship.

Second, settler colonialism describes the relationship between Native Americans and First Nations in North America and the European-turned-American colonialists who violently seized indigenous land, settled, and stayed. In a book chapter titled “Indigenous Experience, Environmental Justice, and Settler Colonialism,” philosopher Kyle Powys Whyte argues that settler colonialism is a form of environmental injustice “that wrongfully interferes with and erases the socioecological contexts required for indigenous populations to experience the world as a place infused with responsibilities to humans, nonhumans and ecosystems.” Whyte’s argument expands understanding of environmental injustice from particular situations in which indigenous communities experience disproportionate pollution or environmental harm to include an overarching system of ongoing marginalization of indigenous ways of knowing, access to sacred lands, and ability to engage in relationships with the more-than-human world. This double meaning of environmental injustice has implications for how we understand indigenous environmental rhetorics.

Third, climate change will disproportionately affect indigenous people, resulting in profound devastation and changes to ways of life. Moreover, indigenous people are more likely to experience energy poverty, wherein lack of proper insulation, substandard housing, and rural

isolation means that these communities use more energy yet have less local control over energy production and spend a higher percentage of their income on energy than non-Native communities. Honor the Earth is on the frontline of addressing both climate justice and energy justice within Native America and First Nations by promoting local sustainable tribal food and energy economies, installing renewable energy on Native American reservations, and fighting oil pipelines, fracking, and coal mining in indigenous communities. Honor the Earth describes its work on climate and energy justice this way:

Indigenous peoples are key in the work to address climate change and energy justice—from our teachings and wisdom of thousands of years living within our cultural practices, to our strategic position in terms of renewable energy and retaining agrobiodiversity in a time of climate change.... The reality is that building a renewable energy economy on Native lands (and restoring local, non-industrial food systems and foods themselves) will not only help mitigate the climate change crisis, but also address the poverty and social injustices that plague our communities. We will continue to oppose the fossil fuel and nuclear economy, with your help. And we will support our communities to restore the Indigenous knowledge, foods, and ways of living for the next generations.

According to Honor the Earth, climate and energy justice can be realized only through promoting indigenous sovereignty and building capacity for self-determination within indigenous communities. Honor the Earth is just one example of an indigenous environmental organization engaged in ongoing tactics designed to promote indigenous rights and work to ameliorate environmental problems. Rhetorical analysis of the tactics that Honor the Earth and other indigenous environmental groups use would greatly expand our understanding of the ongoing dynamics of indigenous rhetoric, social protest, and advocacy.



The time has come for rhetorical scholars to find more ways to engage with the issues that matter to indigenous communities, including environmental issues.

Finally, from a methodological perspective, focusing on indigenous environmental issues calls attention to the ways in which traditional research methodologies have been complicit in perpetuating colonialism, racism, and imperialism. In *Decolonizing Methodologies: Research and Indigenous Peoples*, Linda Tuwaha Smith explains how research about indigenous communities is often based in an extractive model that takes knowledge from indigenous communities with little benefit to the communities. Smith advocates forms of research that are undertaken by indigenous communities; participant action research, in which researchers collaborate with indigenous communities; and tribal IRB and research

boards that facilitate review and permission to conduct research in indigenous communities. *Decolonizing Methodologies* should be required reading for anyone seeking to do research with indigenous communities, including rhetorical scholars who traditionally analyze texts.

The time has come for rhetorical scholars to find more ways to engage with the issues that matter to indigenous communities, including environmental issues. In addition to expanding our repertoire of research to include more focus on indigenous communication, the entire field of communication should consider how we might better serve indigenous communities, not only through research, but also through educational initiatives. ■



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How Scientists can use Social Media to Communicate with Key Publics



By M. Rosie Jahng, Ph.D.

Social media outlets can disseminate critical information to a community quickly and efficiently. Social justice campaigns frequently use social media platforms such as Facebook and Twitter in significant ways to convey important, meaningful information to the public that advances the campaign and engages more people. People and organizations involved in events such as the Ferguson uprising and the Arab Spring, for example, used Twitter to initiate the flow of information, and maintaining a social justice focus in their tweets helped propel the issues within the greater public.



As scientists continue to explore ways to use social media to improve their communication, they need...to develop methods that engage local residents and communicate relevant information in a timely and shareable way.

For two years, the Flint Water Crisis lacked that viral spark as scientists collected data, tested water, and attempted to use social media to inform the public about their findings. As scientists continue to explore ways to use social media to improve their communication, they need to draw on lessons learned from the examples noted above, and to develop methods that engage local residents and communicate relevant information in a timely and shareable way. In a recent article in *Science Communication*, I examined the Flint Water Study scientists' social media presence to determine a more effective crisis communication strategy and, I hope, to offer some practical suggestions that might help scientists better communicate important information on social media.

It was my deep respect for the Flint Water Study scientists that initiated this study to find ways to help the team. I saw them as serving the role of politico-scientists, scientists who see themselves as responsible for making their research accessible to the public during a time of environmental crisis, thus immediately helping as many people as possible. As a Communication scholar, my goal was to help develop a social media strategy for scientists that is easy to implement, can reach the right people, and ultimately may help the scientists do their "science" better by allowing them to feel confident communicating about their work via social media.

THE CRISIS

In January 2016, Michigan Governor Rick Snyder declared a state of emergency in Flint, where thousands of residents had been exposed to high levels of lead through their tap water. Ten days later, President Barack Obama added a declaration of emergency. But the crisis had been building for nearly two years, with little action taken by government officials and little media coverage beyond that provided in local and regional media outlets.

Civil Engineering Professor Marc Edwards, from Virginia Polytechnic Institute and State University, started a research effort that helped Flint residents test their water quality and provided definitive evidence of widespread lead-in-water contamination. The 38 participating scientists took on the role of raising awareness and communicating scientific information to the public and to the local and state government across various channels, including Twitter.

THE STUDY

Studies examining the potential for using social media to engage and develop relationships with key publics show that despite its potential, social media rarely fulfills those purposes. This is likely due to the level of management needed to constantly engage with and provide useful information to social media followers, as well as the cautious steps taken because of the possibility of making mistakes that can so quickly and easily go viral on social media. Researchers from North Carolina State University recently examined how National Oceanic and Atmospheric Administration (NOAA) utilizes Twitter to communicate scientific facts. They concluded that there is a lack of interactivity in messages from NOAA scientists. The problem is not so different for activists and non-profit organizations. Pushing information out is a first step in connecting the public—and key people on social media—with scientific information, but engaging with audiences through the interactive features of social media seems to be equally important.

It was clear even before the national news coverage of the Flint Water Crisis that there was something really wrong with the water in Flint. Visually, the murky water

Pushing information out is a first step in connecting the public—and key people on social media—with scientific information, but engaging with audiences through the interactive features of social media seems to be equally important.



Identifying how to communicate the hard science to ignite conversations on Twitter can allow scientists to sound the alarm to the general public when such attention is warranted.

dispensed from the taps of some homes gave scientists reason to test it. Regardless of what was communicated on the Flint Water Study Twitter account prior to the declaration of an emergency, the team had already been working with the impacted Flint residents and was communicating with them through various channels. As with other events that have gained large social media support quickly, such as the 2014 Ferguson uprising, the Flint crisis presented a similar level of emotional turmoil and threat. However, the Flint Twitter information did not go viral. Identifying how to communicate the hard science to ignite conversations on Twitter can allow scientists to sound the alarm to the general public when such attention is warranted.

Namyon Lee and I conducted a content analysis of the tweets posted by the Flint Water Study (@FlintWaterStudy) was conducted, including those tweets dating from October 15, 2015 (the day the Flint Water Study opened its Twitter account), through February 15, 2016, approximately one month after President Barack Obama declared the Flint water contamination to be an emergency. A total of 422 tweets were collected. As the focus of this study was to describe and understand how the Flint Water Study scientists communicated on Twitter during the lead contamination crisis, all of the tweets posted in the Flint Water Study Twitter account were analyzed instead of selecting samples.

WHAT DID WE LEARN?

We found that the Flint Water Study Twitter communication focused primarily on posting original information without using the platform's interactive features such as retweets or replying to other Twitter users. For example, hashtags and other interactive features of Twitter were not used often, but when used, they were relevant to the issue at hand, such as #FlintWater, #CitizenScientists, and #FlintWaterCrisis. When external links were included in the Flint Water Study tweets, they mainly linked to online news articles and the Flint Water

Study websites for further information. The majority of tweets focused on forwarding information from local news coverage, or on reporting science and research results related to the water quality in Flint. Many of the tweets also called on Flint residents to take action by contacting local, state, and federal government agency officials. Finally, the key advocacy tactic utilized on Twitter to influence local and state governments involved communicating the science/research and expert testimony.

Flint Water Study Twitter communication was focused on “pushing” relevant scientific information and news content to followers on Twitter to fill the information void and reduce uncertainty. Twitter managers maintained their identity as scientists even when communicating on Twitter, which is known as the mobilization channel for many non-profit organizations and activists. We found that the Flint Water Study team rarely associated their research findings with any social issues, such as race or poverty, while other groups used the Flint Water Crisis to rally for social justice. Any connection with disparity issues were not initiated from the Flint Water Study team on Twitter, which the scientists used only to deliver research and the information needed by the Flint residents.



There are numerous strategies hard scientists can employ to develop a more thorough and meaningful crisis communication strategy without compromising their scientific work.

Although understanding the scientists' intentions in sharing news content via Twitter was not within the realm of the study, and while we understood how pushing the scientific information to the public was likely the Flint Water Study scientists' top priority and motivation for their communication, it is necessary to note that many scholars in science communication recommend engaging and interactive Twitter communication, as opposed to the traditional “push” communication of scientific facts.

Given that social media's main strength during environmental and scientific crises is not only to mobilize but also to engage, the lack of interactivity may be why the Flint Water Study tweets had a limited impact on the issue prior to the national news coverage. Future studies will need to examine what motivates or discourages scientists to launch any social media presence to better understand how they can best connect to social media users with their research.

A SOCIAL MEDIA STRATEGY

There are numerous strategies hard scientists can employ to develop a more thorough and meaningful crisis communication strategy without compromising their scientific work. Opening a Twitter account and pushing information out will serve the public when people view that information as relevant and engaging. This is different from reducing the science to meet the expectations of layperson understanding. Pushing out the science to help protect the public from the environmental crises is only the first step. Maintaining active engagement strategies that focus on developing relationships can be a very efficient next step, because actively involved social media users can easily spread the information on behalf of the scientists. Here are a few suggestions to consider:

First, strive to maintain an identity as a scientist. I commend the Flint Water Study scientists for focusing primarily on communicating the science, research, and relevant news coverage, which included all of the facts related to the environmental crisis in their Twitter

communication. Connecting social issues, such as race or poverty, was not done by the scientists. In a *New York Times* interview, Dr. Edwards emphasized how he identifies himself a scientist first and foremost, who “accidentally” was faced with the ethical responsibility to sound the alarm with his research in Flint. As misinformation becomes more prevalent on social media, scientists must maintain their expert status and ensure the credibility of their information so that they are seen as communicating with a high level of authority.

Second, be ready and willing to utilize social media's interactive features, such as engaging in conversations around trending hashtags, and using infographics to succinctly summarize the research and guide the public in taking certain actions. Having scientific credibility and authority is not necessarily the same as being *authoritative*. Seek out ways to communicate in an engaging manner by utilizing the interactive features available on social media. For example, providing recommendations for action enables the public to do something about environmental crises. So, when communicating the science, use an infographic to suggest an action that can change the status quo. Ask social media users to share their stories with the trending hashtag and to include what they think should be done about environmental issues. This will not only decrease the burden for the scientists otherwise charged with constantly creating original posts on social media, but also will help build relationships and engage social media users with the scientists. Yes, there is room for error, trolling, and attacks with misleading information. However, scientists can always selectively retweet any user-generated posts that reflect the scientific facts, serving as the moderators for accurate information. Such interactive strategies can also open opportunities for other environmental activists to share their stories and recommendations, which can help scientists working on social issues develop additional relationships with relevant activists. Scientists have the science, and activists know how to mobilize

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and raise awareness. Some issues, as seen from the Flint Water Crisis, need the combined forces of both.

Finally, add an element of storytelling. Scientists can share their experiences with videos, live feeds, and even a tweet thread under one topic. Emotional responses go a long way in social media, and storytelling scientists' experiences surrounding the crisis can further engage publics. In fact, scholars in strategic communication recommend having a human face and voice in social media communication, as this can result in trust, commitment, and openness.

Maintain the scientific facts, but don't be afraid to put a human face to the science you are communicating.

Social media is filled with misinformation that goes viral in seconds. What differentiates scientists from other social media users is their research and scientific facts. I believe with the right tools, science can be communicated in a more approachable and engaging format. My hope for any scientists seeking to implement social media communication is that they will consider the suggestions I have offered here. ■



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Available February 2019

The Twitter Presidency looks at the rhetorical style of President Donald J. Trump, attending to both his general manner of speaking as well as his preferred modality. Trump's manner, the authors argue, reflects an aesthetics of white rage, and his preferred modality of speaking – namely through Twitter – effectively channels and transmits the affective dimensions of white rage by taking advantage of the platform's simplicity, impulsivity, and incivility. Charting the defining characteristics of Trump's discourse and exposing how Trump's rhetorical style threatens democratic norms, principles, and institutions, this book will be of great interest to scholars and students of political communication and rhetoric, global politics, leadership and communication, and social media.

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