

“The Public is Part of the Audience”: Information Access for Citizens, Democratic Accountability, and Climate Change Science

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Abstract

Information access has been identified by several scholars as an important research area within information science; with intellectual, physical, and social components, genuine access to information can be difficult to secure. According to the theory of democratic accountability, information access is particularly important for citizens in a democracy, who must have access to public policy information—and the information that informs policy decisions—in order to hold their elected officials accountable. This research conducted two case studies into the accessibility of climate change research utilizing qualitative semi-structured interviews. Respondents indicated that citizens’ intellectual, physical, and social access to the information in question was curtailed, thereby hindering their ability to practice democratic accountability. This research extends previous work done in information access and scientific research and demonstrates a need for further investigation into citizens’ access to government and scientific information.

Keywords: information access, scientific communication, qualitative, democratic accountability

Introduction

According to some scholars, “the right of access to information has become the dominant right in the information and knowledge era” (Lor & Britz, 2007, p. 392; see also Byrne, 2003; Doctor, 1991, 1992; Jaeger, 2007; Lievrouw & Farb, 2002). Over 20 years ago, Buckland (1991) recognized that “access emerges as a recurrent theme” across information science research (p. 77). This research adopts Jaeger and Burnett’s (2005) definition of access as “the presence of a robust system through which information is made available to citizens and others” (p. 465). Here, “system” entails the socially and politically contextualized complex means by which individuals obtain information (Burnett & Jaeger, 2008; Burnett, Jaeger & Thompson, 2008; Jaeger, 2007; Jaeger & Bowman, 2005). Hence, this definition reaches beyond technological tools and is useful for studying various forms of information access. Such a system has physical, intellectual, and social components.

Lor and Britz (2007) made a similar argument: “a well-developed and well maintained information infrastructure...alone is not enough. The information that is accessible should also be affordable, available, timely, relevant, readily assimilated, and in languages and contexts users can relate to and understand” (p. 390). The relationships among these different components of information access were explicitly problematized when Blakemore and Craglia (2006) wondered “whether physical access to information is being prioritized above that of social access” (p. 19). Thus, other scholars have recognized, more or less explicitly, the physical, social, and intellectual components of information access.

Burnett, Jaeger, and Thompson (2008) explained that physical access includes “the physical structures that contain information, the electronic structures that contain information, and the paths that are traveled to get to information” (p. 57). Geography, technology, and economics can all affect physical

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access. Intellectual access refers to understanding information in a document, including “how the information is categorized, organized, displayed, and represented” (Jaeger & Bowman, 2005, p. 67). Individual traits such as physical or cognitive abilities and disabilities, language competence, and technological literacy can affect intellectual access; whereas physical access is enhanced, constrained, or manipulated in the external environment, intellectual access is affected by the individual’s internal characteristics. Finally, the concept of social access suggests that elements of one’s social world, including social norms and worldviews, influence the information one accesses, and how and why particular information is sought (Burnett & Jaeger, 2008; Jaeger & Thompson, 2004). Normative social behaviors, according to Burnett, Jaeger, and Thompson (2008), “define the appropriate mechanisms and activities involved in information access” (p. 59).

Jaeger (2007) utilized case studies to illustrate how political contexts can affect information access. This research expands upon this stream, using case studies from climate change science to investigate how various political and social considerations affect access to information, particularly scientific research.

Theoretical Background

In a democracy, sovereignty rests with citizens, who delegate decision-making authority to elected representatives in a principal-agent relationship (Behn, 2001; Bovens, 2006). Thus, Heritier explained, “In the context of the main form of representative/republican democratic legitimation, transparency and access to information play a straightforward supportive role. They function as a prerequisite for exercising popular control over government activities” (p. 824). In other words, information, transparency, and accountability are all central to ensuring the legitimacy of democratic government. Transparency is “the conduct of public affairs in the open or otherwise subject to public scrutiny” (Grimmelikuijsen, 2009, p. 175). Soderman (1998) added, “as far as possible, the information on which the decisions are based should be available to the public.” The theory of democratic accountability posits that citizens must have access to policy decisions—and the information that informs such decisions—in order to hold their elected officials accountable.¹

In our modern democracy, scientific research is often the basis for such policy decisions. Frequently, scientific research may be intricately linked to public policy; scholars in this area recognize that “most public policies and political decisions depend at least in part on some scientific or technical analysis” (Kelly et al., 2004, p. 5). There is growing acknowledgment that science “may clarify political choices, but [it] can never depoliticize them. Empirical studies can identify the tradeoffs, but they cannot evaluate the choices” (Smith, 2005, p. 295; see also Brosnan, 2007; Doremus, 1997, 2008; Jasanoff, 1990; Kelly et al., 2004).

Ensuring that citizens have access to the scientific research underpinning policy decisions enables citizens to be better informed about their government and to better hold officials accountable. Kulawik (2009) argued, “although accountability’s significance for a democratic polity on the whole seems obvious, applying the concept to science and science policy is quite a recent phenomenon” (p. 470). Thus, this research utilizes the theoretical lens of democratic accountability to query citizens’ access to scientific research. Citizens need physical, intellectual, and social access to the science that informs policy decisions in order to evaluate the actions of their elected officials and hold them accountable.

Methodology

Two case studies were conducted to investigate the ways in which political contexts affect the public’s access to scientific information. The process of case identification and selection began with the Union of Concerned Scientists (UCS), which has collected reports of incidents in which access to or use of scientific research was blocked in some way. Two of these incidents lent themselves to a case study of information access: they were both about climate change, both contained names of several key individuals, and both contained explicit restriction of access to scientific information.

Key individuals from these cases were initially identified from the Union of Concerned Scientists’ website (2010) and media reports. Additional respondents were located through relevant documents and

¹ Generally, this theory does not consider whether citizens do actually use said information to hold elected officials accountable.

snowball sampling. Semi-structured interviews were then conducted via telephone. Interviews are an effective method for probing “beneath the surface, soliciting detail and providing a holistic understanding of the interviewee’s point of view” (Patton, 1987, p. 108). While there has been some concern that telephone interviewing might produce less data, “the researchers who have compared telephone interviewing with field [face-to-face] interviewing have generally concluded that telephone interviewing was an acceptable and valuable method of data collection and was successful in obtaining completed interviews” (Sturges & Hanrahan, 2004, p. 110; see also Cook, 2009; Holt, 2010; Novick, 2008).

The semi-structured interviews were conducted with a framework of questions which asked respondents to describe the incidents in question, discuss their roles, and consider how information access was affected. Questions were left open-ended; each interview built upon a particular respondent’s background, knowledge, and responses. Further probing questions were “used to deepen the response to a question, to increase the richness of the data being obtained, and to give cues to the interviewee about the level of response that is desired” (Patton, p. 125). Meho (2006) notes that with qualitative interviews, researchers seek “to improve understanding of social and cultural phenomena and processes, rather than to produce *objective* facts about *reality* and make generalizations to given populations” (p. 1284; emphasis in original). Thus, the interviews yielded in-depth consideration of the research area as seen through the respondents’ perspectives.

All of the principal actors in these cases, a total of eleven people, were contacted, and eight agreed to be interviewed.² The eight interviews, across two cases, lasted a total of 5 hours and 38 minutes. With the respondents’ permission all interviews were audio-recorded, transcribed, and then uploaded into QSR NVivo 8, software which allows for iterative coding of qualitative data. Among other features, NVivo allows researchers to group similar items, create hierarchical trees of “nodes” or features, and code directly onto the content. The data was initially coded into broad categories.³ As common themes emerged from iterative reading of the data, new categories were created. The coding categories were then verified by an independent reviewer (Kohen’s kappa = .83) who sorted a random sample of data into established categories.

In addition to the interviews, one case was supplemented by a publicly available Congressional deposition. Philip Cooney was the Chief of Staff for the White House Council on Environmental Quality. When contacted, he said “I cannot comment publicly...I wish I could help but I will not.” He then mentioned his deposition before the Congressional Committee on Oversight and Government Reform; this publicly available information was added to the relevant case. In order to protect the anonymity of the other respondents, none of the public statements they made were used.⁴ Because the respondents’ own words are the actual data (Patton, 1987), the analysis relies heavily on the interviewees’ speech. Their names have been changed to protect their identities; similarly, their job titles have been obfuscated somewhat (and, as mentioned previously, no publicly available testimony from respondents other than Philip was used).

Case Description

Here, key findings from the two cases are presented, prior to synthesizing the analysis of both cases.

Case #1: Climate Change Reports Distorted

This case involves two different types of editing actions⁵ made to several climate change related documents. First, many reports about climate change science were edited to increase uncertainty or downplay the harmful implications of climate change. Second, references to the National Assessment of

² Because the cases involved a relatively discrete event, the possible number of respondents was small. As with all interview-based research, the availability of willing respondents affects the breadth and depth of the research that can be conducted. With the type of politically sensitive topic under investigation here, this research is more dependent than most on willing (and courageous) participants.

³ The research presented here was part of a larger research project, so not all of the coding categories are discussed in this paper.

⁴ Many documents pertaining to these cases were studied and analyzed; overall, the textual data did not significantly add to the cases—certainly not enough to risk respondents’ confidentiality. In the interests of protecting respondents, some of whom are still federally employed, texts were not used in the case analyses.

⁵ For examples of the edits in question, see http://www.nytimes.com/imagepages/2005/06/07/politics/20050608_climategraph.html.

Climate Change (NACC) document, a seminal, broad report, were removed from almost all subsequent reports.

Four individuals involved in the controversy agreed to be interviewed. **Lionel** was a career bureaucrat, focusing on policy aspects of climate change science. His frustration with this situation led him to resign his position and publicize the disputed editing. **Kevin** was an alleged censor, a political appointee and senior official with decades of experience with climate science, both in and out of the federal government. **Regis**, similarly, was cast as an alleged censor, a political appointee and senior official at the White House's Council on Environmental Quality. **Joan** had a minor role, as a non-governmental observer and climate change professional. In addition to these respondents, the Congressional deposition of **Philip** was used because his role was significant. From the text and interviews with these respondents, four areas of disagreement emerged: how to classify the content of the document, the level of uncertainty about the science, the significance of editorial changes, and the role of politics.

The type of document. The climate change reports that received the controversial editing included the 2003 draft of "Our Changing Planet," the annual report to Congress, and the 2003 Strategic Plan for Research. These documents were variously described by the principal respondents as "a major effort to connect scientists and other experts and stakeholders on diagnosing the implications of climate change and impacts on the United States" (Lionel), as "policy documents that were seeking to describe the scientific basis for, sort of, the next steps of policy development" (Regis), and as "a very broad assessment plan" which tried to "define the questions" that needed to be answered.

The Strategic Plan was created by Lionel and his scientific staff; they pulled scientific analysis and conclusions from several different sources, primarily articles published in premier, peer-reviewed scientific journals. For Regis, this path to the Strategic Plan is important; he saw the document as a "policy document," not a scientific work. He explained that "the irony is [that] the debate and the fascination was over a policy document and its efforts to summarize science...The science occurred, the science was funded, peer reviewed papers were produced...and yet they called it manipulation of the science." In contrast, Lionel saw the editing of the Strategic Plan as a direct assault on science because the document, in his view, contained "solid statements about climate change and the human influence."

Scientific uncertainty/ factual basis. Respondents also disagreed about the levels of uncertainty regarding the science. Kevin said the document and the science it summarized appeared to be relatively unsettled. In the Strategic Plan, he hoped that the group could "begin to address [the questions] in terms of what do we know, what more information do we need...and the like" (see also Philip, p. 73 of his testimony). However, Lionel, the alleged victim, saw the document as a way to communicate the *facts* of climate change to a broad cast of stakeholders. Once the impacts of climate change are translated into "real things happening to real people in real places," then that can "generate more public pressure for stronger government response" (Lionel). Both Joan and Lionel believed the scientific evidence of human impacts on climate change was irrefutable, convincing, and urgently needed.

Significance of editorial changes. For Lionel, any attempt to change those "solid statements" was an attempt to manipulate the scientific basis of those statements. Lionel called these editorial changes "the political policing of the research program." He reported that the suppression of the NACC, which included "no reference to it allowed in program documents, no discussion by program officials, no use of the findings in research planning, abandonment of the scientist-stakeholder network, and no follow-on work" as the most harmful interference with climate change science. Lionel viewed the National Assessment as the definitive statement on climate change science and policy and thought it should serve as a foundation for subsequent reporting and activities. From Lionel's perspective, the editing was so severe that he resigned; he said he "finally realized that if you're really interested in honest climate change communication, your hands are really tied in that office...So I resigned." He distinctly saw purposeful, malicious intent behind the editorial changes to the Strategic Plan and other reports.

Kevin sharply disagreed with this portrayal; instead, he argued that the *scientists* were heavy-handed and strong editing was needed to keep the Strategic Plan a neutral, effective policy tool. He said, "Many of what I might call the activist scientist group viewed that they couldn't let any paragraph or sometimes almost any sentence pass without making it what I called an advocacy sentence or paragraph." He argued for the removal of "adverbs and adjectives" from the reports. Kevin believed that the climate change scientists, as a result of working on this problem for years, were no longer neutral.

Regis, the most senior of the three, saw the Strategic Plan editing more simply than either Lionel or Kevin. Regis portrayed the editing as a standard procedure often done when multiple agencies are contributing to a report. Philip agreed, noting that his edits were “recommendations, comments. A lot of them were posed as questions, in fact” (p. 152). He also explained that many climate change reports were reviewed and edited by dozens of agencies; Philip saw his edits as just a typical part of the multi-agency process. Regis said, “The issue was all about the editorial process of taking different entities’ comments and trying to reconcile them.” Furthermore, Regis argued that “it’s absolutely true that the guy who was coordinating the comments, changed language in the document, but his changes all went in the direction of the actual language given to us by scientists, and then...the corrections were reviewed by scientists.” In other words, Regis thought Lionel, as a policy person rather than a scientist, should have conceded to the staffer who made the editorial changes (though Regis’ statement about deferring to the scientists cannot be verified from this research).

Role of politics. A final source of disagreement between the interviewees was the role that politics played in the editorial changes. Lionel noted that his office “had the science world on one side, but the White House political world on the other side, and they clashed in that office,” which he called “a problem in the scientific integrity department.” Joan, the non-governmental observer, was more forceful, arguing that the editorial changes happened “for political reasons...to support a particular position.”

However, Regis pointed to an investigation by the House Committee on Oversight and Government Reform in 2007, which held hearings on “Allegations of political interference with government climate change science.” As Regis notes, the committee issued a preliminary report, but not a final report: “You’ll find out that there was never any final report issued, because at the end of the day, there was no *there*, there.” From his perspective, political considerations simply did not affect the editing of NACC. Kevin, similarly, did not see any politics involved; he was committed to “doing it right, following scientific principles...I was interested in doing this, but not if this was going to be a whitewash.” Thus, to Kevin, charges of political interference in the NACC or other climate change reports were particularly frustrating.

Analysis of this case. It is unsurprising that Lionel, the alleged victim of censorship, perceived political interference with the NACC. Similarly, it is unsurprising that Kevin and Regis, the alleged censors, perceived the editing to be beneficial and unmotivated by politics. The other differences—the perceived levels of scientific uncertainty and the type of document—were unanticipated. Clearly, for Lionel and Joan, the NACC editing was problematic because they viewed it as a *science* document conveying clear, definitive scientific facts to a broader audience. Just as clearly, Kevin, Philip, and Regis believed these revisions were reasonable changes to a *policy* document, one which ought to portray the uncertain nature of much of climate science. These core differences cannot be explained simply by referring to the respondents’ background or training. Lionel had little scientific background; he described himself as a policy person who “came at global climate change as a policy problem,” while Kevin had a Ph.D. in science, was a professor of environmental studies, and worked for many years on federal environmental issues. In other circumstances, all three of the principal respondents might well have agreed on scientific principles, climate change facts, and potential policy actions. Yet when working on certain climate change documents, particularly the NACC, sharp differences arose.

Case #2: Climate Change Interviews Restricted

This case occurred in an agency in the Department of Commerce (DOC); several agencies within DOC are responsible for studying climate change and global warming. At this particular agency, pseudonymously called Climate Agency (CA), federally employed scientists pursued many different lines of research, but reported that they were blocked from speaking with the media. In some cases, the scientists were told to turn down media requests for interviews or had interviews cancelled on their behalf; in other cases, media contacts were explicitly directed toward scientists who were skeptical of the connections between climate change and human activity.

Four people consented to be interviewed for this case. **Nathan** was a prominent researcher on hurricanes and the climate; he had to negotiate prior approval before speaking to the media, and several times that approval was denied. **David**, a public affairs official for CA, was an alleged censor and was effectively responsible for communication between CA scientists and political appointees; approval or

denial of media requests passed through his hands. **Natalie** was another public affairs official who played a more minor role. Finally, **Joshua** was a prominent climate scientist, not formally affiliated with the CA or DOC. Through interviews with these four respondents, three foci emerged: the nature of the restriction, the motivation for it, and the outcome. Overall, there was considerable agreement among the interviewees, though some saw more nuances in the situation.

The nature of the restriction. Scientists working for CA were accustomed to speaking freely and frequently to members of the media about their research. Natalie, the public affairs official, explained that reporters for print, radio, and television media were often in direct contact with scientists: “a lot of times they’ll just contact our scientists directly, especially if they’ve... worked with them before on some other project.” As a scientist at the intersection of two complex research areas, Nathan’s work was somewhat esoteric, though his opinion was still sought by the media, particularly after Hurricane Katrina in 2005. Nathan felt that his access to reporters was restricted for political reasons. He said, “there was some interference with, from the government, with my ability to communicate with the public.” More explicitly, Nathan reported, “there was a period when we were having difficulty, where I wasn’t able to do an interview because... we had to have interviews approved through [CA’s] communication office or something, and they were not approved.” He recalled specific incidents when he asked for approval to speak with specific media contacts, and the approval was either denied or delayed until the reporter no longer wanted the interview. Joshua, the non-government scientist, noted that he knew Nathan and other scientists had “certainly [been] prevented from giving an interview.” Nathan described this as a deliberate maneuver in which “the information flow was restricted.”

To a certain extent, David, the public affairs official, agreed with the broad contours of what happened. David explained, “I would have to go to [my superiors], and say, ‘hey, look, can we allow this scientist to talk to this reporter?’” He would then relay the response to the scientists and reporters in question. However, David, who was not a political appointee, also saw more nuances in the situation. He called himself a “pragmatic advocate for the release of information,” meaning that he supported scientists’ interactions with the media, but realized that more senior political appointees would not approve of open-ended, broad licenses to speak with the media. He explained that he practiced “a lot of careful negotiation” so that he was not replaced with “someone who was more dogmatic, under whom nothing would have come out.” Instead, David’s approach was to cultivate “trust with the politicals, [then] I was able to get them, to convince them, to open up some of the channels, and let media talk to some of these scientists.” While David may have personal motivations for describing the situation as requiring compromise, his perspective also illuminates the complexity of these alleged incidents of political interference. Although portrayed as simple black-and-white travesties by advocacy groups such as the Union of Concerned Scientists, the actual participants reported experiencing more nuance and uncertainty.

Motivations for the restriction. Nathan first suggested that the motivation behind the restricted access was his research: “my impression was that...they saw some other scientists as having a view which they wanted to have expressed more visibly than mine. I think maybe because they trusted the other scientists’ view.” Because Nathan’s research suggested links between climate change and hurricane frequency and intensity, some people thought it supported more aggressive climate change policies (though Nathan himself has never advocated such policies); thus, Nathan thought that his media access was restricted in favor of other researchers whose research was not politically challenging. David viewed the situation similarly, noting that after Hurricane Katrina, the administration “wanted one message coming out, and it was all about the recovery effort in the gulf. They didn’t want a lot of distractions,...particularly information about how maybe global warming or climate change was making hurricanes stronger.”

Both David and Nathan noted that there was some evidence, from media investigations, that approval or denial of interviews was handled by senior political appointees in the DOC. Beyond this broad perspective, though, David did not have much to contribute about the underlying motivations. He explained, “I don’t have a lot of insight into motivations. I don’t know exactly what their true beliefs were.” Joshua was less circumspect; from his view, “it was a political action at the time, and it related very much to the regime of George W. Bush and their suppression of science.”

Outcome. All respondents agreed that this situation was resolved satisfactorily—that is, the requirement to seek prior approval for media interviews ceased. Once Nathan spoke publicly about these

restrictions, several media outlets pursued further investigations and Congress held hearings. Nathan explained that “this sort of interference through the public relations side of things went away more or less. I didn’t feel any real restriction after that became public.” David concurred: “Once all of this came out, then it was open air, there was just no more scrutiny, there was no more of this, ‘should I check with this person or with that person first?’” Later, communication policies at CA were further clarified; it was formally stated that scientists did not need to seek prior approval for interviews, but could handle their own media contacts if they wished.

Analysis of this case. Some of the respondents have been portrayed as adversarial. However, in these interviews, they frequently voiced similar perspectives and explanations, with more or less nuance. Their respective roles certainly affected how they perceived the situation—for example, David saw himself as caught in the middle, advocating on the scientists’ behalf, whereas neither of the scientists interviewed expressed such a view. On the other hand, all of the respondents described the general situation in the same way, and all seemed pleased with the eventual outcome.

Findings & Discussion

Ostensibly, this sort of scientific research—conducted by scientists employed by the federal government—is created for policymakers. This relationship was taken as a “given” by most respondents. They assumed that the science being conducted was, or should be, used by policymakers; that was the point, for example, of the documents researched and created by Kevin and his staff. However, the importance of the public as an audience for this scientific research was striking. Seven of the eight respondents explicitly mentioned the public or citizens during their interviews (without prompting from the interviewer). Citizens’ information access was an important concern for nearly all respondents. Speaking of the complicated climate change reports, Nathan emphasized that some assessment reports “are designed to provide information to the broad spectrum of people, including policymakers.” Notice that Nathan placed the public first, and included policymakers as a subset of the general public. Many scientists viewed their research as being fundamentally *for* citizens.

Yet, as the previous case descriptions illustrate, citizens’ access to this scientific research was hindered in various ways. By synthesizing the findings between the two cases, we can see how citizens’ physical, intellectual, and social access were affected, which in turn has implications for democratic accountability.

Intellectual Access

This element of information access is fairly complicated in these cases. On one hand, several respondents indicated that the climate change research in question here contained information that was accessible to a broad swath of people. One of the most important reports, from Lionel’s perspective, was not written in complex scientific jargon and “was distributed widely. It went to reporters, it went to educators, it went to scientists, [and] it was posted on the web, explaining the federal capability for climate change research.” Nathan told people, “if you want to educate yourself, start by reading the summary for policymakers.’ It’s only, I forget, 20 pages long or something. Every citizen, every policymaker who really wants to truly be informed about this problem should start there.” Here, Nathan notes both the availability of the information and the option to read more deeply to access the complex science that underlies the summary report. By directing others to the report, Nathan encouraged their scrutiny and their comprehension, anticipating that this would reduce general uncertainty about climate change science.

However, many respondents were less sanguine about the public’s ability to intellectually access climate change science. One respondent worried about the “science illiterate population” of contemporary America; others were more circumspect, but nonetheless concerned about how well citizens understood the complex science that shapes much public policy. Joan said, “part of the problem is that science is very difficult to communicate...scientists are not necessarily good at communication.” David concurred with the difficulty of communicating science to the general public, noting that “the unfortunate thing is that a lot of times, the situation is so complex, that it’s very difficult to appropriately characterize it and to put it into terms that Joe Public can understand.” On the other hand, simplifying too much glosses over the

nuance and complexity of this scientific research. He said he faced a “catch-22: you either inundate people with all of the information, or you dumb it down to a point that people can easily ingest it.” Many citizens are fairly unknowledgeable about basic scientific information (Stine, 2008; Doremus, 1997), so understanding the complex science of climate change may be particularly unlikely. Joshua noted: “there are a lot of polls that have been done and there are things that are demonstrably wrong that are believed by many people in the public.” Thus, respondents had mixed views about citizens’ intellectual access to scientific information. To a certain extent, intellectual access was affected by the restriction of scientific research as described in these cases—for example, the editing changes or the denial of media interviews may have prevented citizens from accessing more easily understood information.

Physical access

In some ways, the restriction of this component of information access is the most clear-cut: when research was edited or scientist denied media contact, citizens did not have physical access to the information in question. The significance of physical access can be seen in the penciled-in editing remarks made by Philip and others; they were literally removing words from citizens’ access. Lionel called these editorial changes “censoring or misrepresenting the communication of climate science.”

Nathan, again, neatly summarized the connections between science and the public: “In my view, the channels of communication between scientists and the public, through the media, should be open.” These channels of communication are physical aspects of information access; these channels are the very conduits that some respondents tried to close.

Social access

In addition to intellectual and physical access, citizens also need social access to scientific research. Social access includes the ways in which one’s worldview and normative behaviors affect one’s access to information. One way in which social access is implicated in these cases is citizens’ interest in the scientific research in question. Several respondents indicated that the general public does not seem particularly interested in the intricate details of most science policy.

Joan, for example, said, “I think the public, particularly in the last couple of years is much more concerned about other issues than this...They’re much more worried about the economy and their jobs, all of those kinds of things.” The general social climate in the U.S. is not conducive to in-depth consideration and analysis of scientific research. In a more colloquial manner, David attributed the lack of public interest in science policy to the “short attention span” of the American public. From his perspective, many Americans have too many issues to worry about or are too easily distracted from scientific research and its implications for public policy. In addition, the broad social implications of climate change reports were a significant concern for all respondents. They believed that a strongly worded report, with clear policy imperatives, could have substantial impact on many aspects of modern society.

Implications for democratic accountability

Communicating with the public—providing access to the scientific research that guides public policy—is seen as important because the public is so important to democracy. Joan thought that better communication of science policy to the public was important because “then you would see some feedback into the politicians, I think.” She recounted conversations with political leaders who said they “just never heard from their constituents on this issue” of climate change. In her experience, Congresspeople would say, in disbelief, “you’re asking me to step out on this issue when there’s no one in my state that even cares about it?” Politicians, elected to represent citizens’ concerns, were reluctant to act when no concern had been voiced.

Another climate scientist similarly explained that “the public influences policy through their voting, so the public is part of the audience for scientific information, because ultimately in a democracy, the voters are in charge.” These respondents are directly implicating the theory of democratic accountability: voters have the power to hold their elected officials accountable, but need to have access to information

in order to do so. When their constituents did not express concerns about climate science, politicians did not take action on climate change.

Several respondents hoped that providing more information to the public would result in more interest and passion about climate change public policy, which would then lead politicians to be more active. Citizens need access to the full range of information guiding public policy to gauge the effectiveness and appropriateness of policy actions; armed with such knowledge, citizens can then hold government officials accountable.

Natalie expressed a related aspect of accountability when she discussed the public: “The better the general public understands what this agency’s work is doing, which they are ultimately funding, they’ll see the value of their investments in science.” Accountability to citizens is important, according to Natalie and others, because taxpayers financially support science policy. This fiscal stake in science policy is both a reason citizens should have access to scientific research, and a reason that science policy should be conducted scrupulously.

Conclusion

Among respondents, frustration and concern were strongest when the public’s information access was restricted. Respondents who felt information access was constrained expressed particular concern about citizens’ lack of access. Those who thought information was not restricted, or that the restrictions were insignificant, indicated that citizens could either access the information in other ways or were unlikely to need access to the information. In these cases, the respondents saw a clear connection between citizens’ access to information and broader ramifications of climate change science, such as possibly significant changes to U.S. public policy. For example, Lionel argued that once the impact of climate change “became the national conversation,” elected officials would be pressured to make substantive policy changes; any action that delayed or prevented the national conversation from occurring—such as restricting information access—was therefore problematic. Nathan concurred, saying that his role as a scientist is “providing it in an understandable form” which then leads “to the policy question, which is what should humans do about it?” The symbolic significance of the public as the legitimate power in a democracy was the basis for both attempts to restrict information access and challenges to those attempts.

These case studies illustrate the utility of the information access framework. By using this framework, we can better understand the ways in which access to information can be facilitated or restricted. The cases also demonstrate the centrality of information access to democratic accountability. Without intellectual, physical, and social access, citizens cannot hold their governmental officials accountable. Dissemination of information enhances democracy.

The theory of democratic accountability is often criticized for being normative and not describing the actual practices of citizens, yet in this research, it does hold some explanative power. Democratic accountability was the foundation for why scientists wanted their research to be shared with citizens, and was also, perversely, the motivation for restricting access to that research. Further research can examine whether, and to what extent, this is true in other situations. For example, a great deal of research has been done on other complex policy areas, such as the environment and health. Future research could examine citizens’ access to this science, and how access or a lack of access affects democratic accountability. Information access is also important at the state and local levels, not just the federal level. To what extent does access to information about policies (and the underlying information on which those policies are based) facilitate citizen involvement in local and state politics? Additional research is needed to further demonstrate the relevance of the information access framework and the theory of democratic accountability, but this research has established their utility.

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