

CLIMATE CHANGE IN THE NEWSROOM:  
JOURNALISTS' EVOLVING STANDARDS OF OBJECTIVITY  
WHEN COVERING GLOBAL WARMING

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

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by  
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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

CLIMATE CHANGE IN THE NEWSROOM:  
JOURNALISTS' EVOLVING STANDARDS OF OBJECTIVITY  
WHEN COVERING GLOBAL WARMING

presented by Sara Shipley Hiles,

a candidate for the degree of master of arts,

and hereby certify that, in their opinion, it is worthy of acceptance.

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I would like to thank my parents, Daniel and Sallie Shipley, for supporting my education from childhood onward. Because of your example, I believe that education is the best investment we can make in our children.

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## USE OF TERMINOLOGY

### **“Global Warming” vs. “Climate Change”**

The terms global warming and climate change both are used in this paper. Both refer to changes caused by the warming of the Earth’s atmosphere, but they have different meanings to different audiences. Among scientists, “global warming” refers to an increase in Earth’s average surface temperature due to rising levels of greenhouse gases, whereas “climate change” refers more broadly to a long-term change in the Earth’s climate. Scientists tend to prefer “climate change” because it is inclusive; in addition to temperature rise, it covers effects such as ocean acidification, sea level rise and precipitation changes (Conway, 2008).

The general public seems to prefer the term “global warming,” which became popular following NASA scientist James Hansen’s famous speech to Congress in 1988. The phrase’s dominance is evident as an Internet search term. Google Trends reports that people worldwide searched for “global warming” 1.86 times more often in 2010 than they searched for “climate change” (Google Trends, 2010).

The terms also have political connotations. In a 2002 memo leaked to the press, Republican strategist Frank Luntz argued that the Bush Administration should try to shift policy discussions from “global warming” to “climate change”: “while global warming has catastrophic communications attached to it, climate change sounds a more controllable and less emotional challenge” (Lee, 2003). Pollsters find that respondents tend to express more concern about the

environment when the words “global warming” are used, so perhaps that explains why many environmental groups use the “global warming” terminology in their marketing (Ward, 2007).

Journalists tend to use the terms interchangeably, perhaps because they bridge the gap between scientists and the public, and perhaps also to add variety to their writing. Because this paper focuses on journalism, it will also use the terms interchangeably in general usage. When specific sources used a specific term, that choice will be reflected.

### **“Skeptics”**

The term “skeptics” is used in this paper to describe those who challenge evidence that anthropomorphic climate change is occurring. This usage is controversial, because many scientists and journalists like to think of themselves as skeptics. Some scientists have suggested that the term has been misappropriated and offer alternatives such as “deniers” or “contrarians” for opponents of global warming science (Ward, 2007). However, these terms are also imperfect. Given the historical nature of this paper, it will generally use the term “skeptics,” because that is the word initially ascribed to these opponents, and it is commonly used in mainstream media. Quotation marks will be used around the word to acknowledge the dispute over its use.

## 1. INTRODUCTION

Climate change is arguably the single most important environmental issue of our time. The gradual warming of the Earth's average temperature has the potential to permanently alter life on this planet. Already, scientists have detected rising sea levels, birds and tree buds arriving sooner in the spring, melting ice and permafrost, and the spread of pests and diseases to newly hospitable areas. Climate models predict fiercer storms and floods, increasing heat waves and wildfires, water and food shortages, and an increase in human death and disease, as well as animal extinctions (Intergovernmental Panel on Climate Change, 2007).

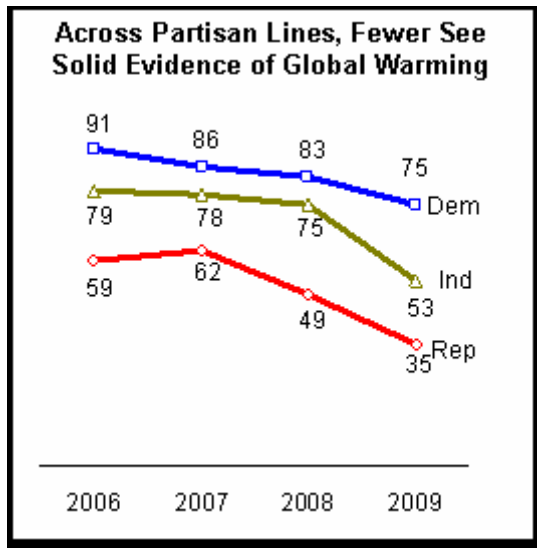
For journalists covering the environmental beat, there is no bigger story – and none more fraught with challenges. Not only is the story scientifically complex, it is journalistically treacherous. Discourse on climate change has become extremely polarized, and journalists have been caught in the middle of a debate that challenges the future of the Earth, and of journalism, as well. The story of climate change is a useful lens through which to examine whether traditional journalism values – particularly the bedrock of “objectivity” – still serve media and society.

But first, a bit of background. For many Americans, the climate change story lit into the national consciousness in 2006, when former Vice President Al Gore's documentary, “An Inconvenient Truth,” became a box office sensation. The following year, Gore shared the Nobel Peace Prize with the Intergovernmental Panel on

Climate Change, and the Associated Press named climate change as one of its Top 10 Stories of the Year. Then, the issue took a prominent place in the 2008 U.S. presidential election cycle, with the opposing candidates, Republican John McCain and Democrat Barack Obama, both pledging to address global warming immediately.

Once elected, however, President Obama was unable to deliver on his campaign promise to deliver action on climate change. Anti-Obama sentiment and a crippled economy weakened the Democrats' plans for new environmental legislation. A bill proposing "cap and trade" limits on carbon dioxide emissions died in the U.S. Senate in 2010.

Americans haven't forgotten climate change. In fact, the story continues to garner headlines with every major hurricane and oil spill. But opinions on what to do about it – and whether it even exists – have waxed and waned. According to research by the Pew Research Center for the People & the Press, 77 percent of Americans surveyed in 1996 believed there was solid evidence of global warming. By 2009, even as scientific evidence of warming accumulated, that number had dropped to just 57 percent (Pew, 2009).



*Fig. 1.* Source: Pew Research Center for the People & the Press, 2009.

Further, opinions are sharply divided along political lines. Just 35 percent of Republicans surveyed in 2009 believed there was solid evidence of global warming, compared with 75 percent of Democrats. Both camps were down significantly from previous years [*see Fig. 1, “Across Partisan Lines, Fewer See Evidence of Global Warming”*].

Journalists covering the topic are squarely in the middle of the ruckus and frequently find themselves targeted by critics on both sides.

Witness what happened when New York Times reporter Andrew Revkin, one of the foremost journalists covering the environment, suggested during a 2009 speech that parents might be given a carbon credit for having only one child, thereby preventing the carbon emissions more children would generate. The comment ricocheted through the blogosphere until it landed in the studio of Rush Limbaugh, conservative talk-radio host, who then suggested Revkin might as well kill himself to save the planet.

As Revkin recounted on his blog, *Dot Earth*:

Equating “environmentalist wackos” with “jihad guys” who strap explosives onto other peoples’ kids and the like, [Limbaugh] said:

“This guy from The New York Times, if he really thinks that humanity is destroying the planet, humanity is destroying the climate, that human beings in their natural existence are going to cause the extinction of life on Earth — Andrew Revkin. Mr. Revkin, why don’t you just go kill yourself and help the planet by dying?”

This might be funny, in a sad way, if it weren’t for the fact that my mailbox is already heaped with hate mail (2009, October 20).

How do reporters conduct themselves in such a hostile environment?

Traditionally, journalists could bank on a formula for writing a story everyone would recognize as fair: tell both sides of the story. Nowadays, such “he said, she said” journalism doesn’t hold up, especially when covering an intensely scientific story in a fractured media landscape. Traditional notions of journalistic objectivity are being challenged and new definitions are coming forward.

This research is concerned with how reporters deal with issues of balance and bias when covering climate change. How do they decide when a statement has become a fact and no longer requires attribution or contrasting viewpoints? How do they decide which sources to include? How do reporters parse one of the cardinal rules of journalism – Thou Shalt Be Objective – when covering such a touchy topic?

These questions are important in an era when the definition of who is a journalist has been thrown into question and media ethics are dissected at every turn. Both journalists and their audiences deserve a thorough and transparent discussion of the thought process that goes into the making of one of the most crucial stories of our time.

## **2. PURPOSE AND RESEARCH QUESTION**

The purpose of this research is to understand how reporters think about and apply the occupational norm of objectivity to the fast-changing, often controversial topic of climate change. The study involved in-depth interviews with 11 experienced U.S. environmental news reporters for mainstream print or online publications who have covered climate change for at least five years. The interviews engaged subjects in a discussion about various factors influencing media coverage of climate change during the past five to 10 years, particularly ethical standards surrounding objectivity. Reporters for mainstream print or online publications were the focus because they make up the bulk of the professional environmental journalism corps.

The research question, then, is: How do environmental reporters for mainstream print and online media understand the occupational norm of objectivity as applied to coverage of climate change, and how has that changed in the past five to 10 years?



### **3. BACKGROUND**

This research has its genesis in an experience the author had in the early 2000s when she was an environmental reporter at a major Midwestern daily newspaper. At the time, she wrote occasional stories about global warming. An editor demanded that she include quotes from scientists who either denied that climate change was happening or downplayed its impact. These so-called “skeptics” were frequently quoted in news stories at the time because journalists felt the need for a balanced approach to what many viewed as a scientific controversy.

These days, the media frequently portray climate change as an accepted, well-documented phenomenon. The “skeptics” are no longer on the short-list of most reporters’ sources.

What happened to change the way global warming is covered?

On one level, scientific consensus has coalesced. The Intergovernmental Panel on Climate Change, a scientific panel of the United Nations charged with evaluating climate change research, issued reports in 2001 and 2007 indicating increasing certainty that global warming is occurring and being caused by human activities. A number of prominent climate “skeptics” were largely silenced after investigative reports revealed they were being paid by the oil industry. Scientists such as NASA researcher James Hansen have been increasingly bold in speaking out.

Reporters also appear to be more educated about the science of climate change and how to cover it. For example, the Society of Environmental Journalists’

annual conference has included numerous panels on the topic in recent years. Scholarly journals and trade magazines have published articles about climate change coverage, some of which criticized reporters for relying too heavily on “skeptical” sources.

In addition, popular opinion and political winds have shifted. Climate change is no longer the exclusive province of scientists; it is part of our common lexicon. Nightly newscasts and political candidates frequently refer to it, whether questioning its existence or urging action to curb it.

These factors and other may influence the way the media cover climate change. As a journalist and an academic, the author is interested in telling the story behind the story – in understanding *why* coverage has changed in recent years.

Of particular interest to this research, the notion of journalistic objectivity has come under increasing scrutiny, as evidenced by a cascade of commentaries in the mainstream and alternative media. Objectivity can be defined in many ways. The World English Dictionary defines it as “the state or quality of being objective,” that is, “existing independently of perception or an individual's conceptions; undistorted by emotion or personal bias; of or relating to actual and external phenomena as opposed to thoughts, feelings, etc.” (*Collins English Dictionary*, 2010).

For the American press, objectivity has long been an essential professional characteristic. Journalists generally define it as impartiality, fairness and devotion to facts. In practice, however, complete objectivity in the literal sense of the word is impossible, so journalists try to honor this value while negotiating a changing

professional landscape. The explosion of cable news channels, online media, bloggers and talk radio shows – many of which thrive on opinion and commentary – has only added to the confusion surrounding objectivity. The traditional ideal of objectivity may be outdated or even dead for modern journalists, and the author felt it would be useful to know whether reporters still try to achieve it, or if they have replaced the concept with new standards.

This issue could be studied in many ways. There is a body of analytic research on global warming coverage – mainly content analyses of coverage in U.S. newspapers. However, there is less discussion from the reporters themselves. Interviewing journalists about media coverage during the past five to 10 years encompasses a period of apparent transition and lets the reporters explain the differences for themselves.

## 4. THEORY

To help explain how climate change coverage has changed, this study will focus primarily on the occupational norm of objectivity. But first, it is helpful to understand the foundation of modern media studies, the related theories of agenda setting and framing.

### 4a. Agenda Setting and Framing

McCombs and Shaw laid out the concept of agenda setting in their landmark 1972 study, which found that the media have the power to set the “agenda” for the public (McCombs & Shaw, 1972). The researchers found a strong correlation between the issues ranked as important by the public and those prominently covered by the media. The media made issues more *salient*, or gave them the perception of being important. As Cohen wrote in 1963, “the press may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about” (cited in McCombs & Bell, 1996, p. 106).

Agenda-setting theory has generated hundreds of studies (McCombs & Bell, 1996). Many of these works find a correspondence between the order of importance given to issues by the media and by the general public (McQuail, 2005). However, McQuail pointed out that this evidence is insufficient to show a causal connection

between the two, and the current media effects model generally holds that the power of the media can be negated by an individual's response to it.

Agenda-setting theory is important to this research primarily because of its relationship to framing theory, a related area of mass communication research. Whereas agenda-setting theory focuses on *which* issues the media cover, framing looks at *how* the media covers those issues. Framing has been called "second-order agenda setting" (Ghanem, 1997).

The roots of this theory come from sociology and psychology, which teach us that individuals constantly struggle to interpret their life experiences and make sense of the world, and, given different presentations of a scenario, people will make different choices (Scheufele & Tewksbury, 2007, p. 11). Tuchman, often called the originator of framing theory, said the media set frames of reference that the audience uses to interpret and discuss public events (1978).

Entman (1993) differentiated framing from agenda-setting this way: agenda-setting involves the selection and salience of *issues*, whereas framing involves the selection and salience of *aspects* of an issue. Entman (1991) suggested that frames "render one interpretation more readily discernible, comprehensible and memorable than others" (p. 7).

As a practical matter, journalists cannot avoid framing their stories. They must choose devices to build the narrative, such as theme, sources, and rhetorical construction (Liebler & Bendix, 1996). This leads to the inevitable introduction of bias as journalists choose to emphasize some aspects of a story over others.

There is an extensive body of literature examining science and environmental issues through the lenses of agenda setting and framing. Several studies have found that the agenda-setting effect is stronger for issues with which individuals have little personal contact. The environment has been cited as a prime example of such an “unobtrusive” issue because people must rely on the media for information (Ader, 1995). For example, Ader found the agenda-setting effect to hold true regarding coverage of pollution. As media coverage of pollution increased from 1970 to 1990, the public believed the issue to be more important, and people perceived it to be an increasingly significant problem. In the real world, however, pollution actually decreased over time, contradicting the media’s focus on the issue.

Global warming is another example of an environmental issue with which most people have no direct experience. “Since the general public garners most of its knowledge about science from the mass media,” Boykoff and Boykoff wrote, “investigating the mass media’s portrayal of global warming is crucial” (2004, p. 125).

These theories can help explain how journalists choose to frame their stories on global warming, and how those frames may have changed over time as questions about objectivity came into play.

#### **4b. Objectivity**

Journalistic objectivity can be difficult to define. As one participant in this

study said, “Objectivity is like pornography – I know it when I see it.” Nevertheless, scholars have been analyzing journalistic objectivity for decades. Schudson (1978) called objectivity a “moral philosophy” that seeks to separate facts from opinions (p. 8). Mindich (1998) defined five elements – detachment, nonpartisanship, inverted pyramid writing, facticity, and balance. Tuchman (1972) said journalists use objectivity as a “strategic ritual” to deflect criticism of their work and defined five common practices: presenting conflicting possibilities, finding supplementary evidence, using quotation marks, putting the most important facts first and separating facts from opinions. Gilligan (2006) explained the norm of objectivity by defining its routines: quoting authoritative sources, using an approach of detachment, and representing the major sides of an issue.

Objectivity long has been viewed as one of the most important canons in American journalism, but it was not always so. As Schudson explained in his pioneering study, “Discovering the News” (1978), journalistic objectivity is a particularly American notion that did not spring fully formed along with the establishment of a free press, but rather developed slowly over many decades.

Many scholars believe that the birth of the “penny press” in the 1830s marked the advent of an ideal of objectivity in the American media (e.g., Schudson, 1978; Schiller, 1981; Mindich, 1998). Prior to that time, many newspapers were but organs of political parties or logs of merchant ship cargos. The penny press did away with political party affiliation and proclaimed it would provide common news for the common man at an affordable price.

Soon thereafter, the invention of the telegraph in 1840 and the formation of the Associated Press in 1848 have been said to have contributed to the straightforward news style that came to be a hallmark of “objective” journalism (e.g., Mindich, 1998). In addition, the wire services wanted to sell their stories to a wide audience, so they began to avoid commentaries that might offend potential readers (Sigal, 1973; Schudson, 1978; Mindich, 1998).

The latter half of the 1800s also marked a general shift in society from a worldview shaped by religion and philosophy toward one where empiricism was king; this led to the supremacy of science and medicine and the accompanying trend away from flowery descriptions and moralistic hyperbole and toward “fact-based journalism” (Mindich, p. 14). The development of photography and other forms of realism also facilitated the belief that it was possible to reflect the world as it actually was (Schiller, p. 10). Generally speaking, journalists believed that facts could be trusted.

World War I sowed doubt and anxiety in this naïve worldview. Journalists experiencing propaganda and censorship during the war became suspicious of previously unquestioned “facts” (Schudson, p. 141). Professional public relations agents appeared on the scene with further spin and suggestion. Journalists were influenced by the teachings of social science, which argued that human beings see the world through socially constructed filters (Schudson, p. 6). In other words, reality was more complicated than it might first seem, and journalists needed to employ a more sophisticated approach to capture it accurately. Journalist and media



critic Walter Lippmann said that the press was biased like any other human enterprise, and he urged journalists to be vigilant and apply the scientific method in their reporting. "As our minds become more deeply aware of their own subjectivism," he said, "we find a zest in objective method that is not otherwise there" (Lippmann, 1922, p. 409-410).

During the post-World War I war era, journalists increasingly rejected the simple faith in facts they had once held in favor of a more nuanced view of objectivity. "Objectivity, in this sense, means that a person's statements about the world can be trusted if they are submitted to established rules deemed legitimate by a professional community. Facts here are not aspects of the world, but consensually validated statements about it" Schudson wrote (p. 7).

By the 1930s, the tenet of objectivity was articulated as a professional journalism standard (Schudson, p. 157), reinforced through professional societies, textbooks, and other public pronouncements. Journalists gradually defined the rules and procedures that made up objective journalism. For example, a news story about the mayor's speech could be viewed as objective because the mayor was generally recognized as a newsworthy person, his comments were recorded faithfully, and the views of the "other side" were reflected in the publication. It does not mean everything the mayor said was true or that all possible views of the situation were represented.

The ideal of objectivity has become deeply problematic. Starting in the 1970s, many researchers emphasized the notion that "news is made, not found"

(Tuchman, 2002, p. 80). A news story is the product of a social institution, translated into concrete texts through newsroom routines, such as deciding how important a given story is, or which sources to use (Tuchman, 1978). Schiller spoke of objectivity as part of the “invisible frame” that brackets news stories. He described objectivity as a paradoxical notion that implies that there is an objective world, of which the media may somehow give an accurate account. “Objectivity facilitates the otherwise difficult belief that the newspaper ‘mirrors’ or ‘reflects’ reality,” Schiller wrote (p. 2).

Objectively covering news events that are egregiously wrong has also been criticized as socially irresponsible. For example, journalist and anti-lynching crusader Ida B. Wells criticized The New York Times for its “balanced” accounts of lynchings (Mindich, 1998, p. 14). Journalist Philip Meyer looked back with disgust on his days covering school integration in Miami, when his stories treated segregationists and civil rights activists evenhandedly (Meyer, 2004a).

Many scholars and practitioners of journalism deny that objectivity exists at all. Herman and Chomsky, in *Manufacturing Consent* (1988), rejected the “media claim that their news choices rest on unbiased professional and objective criteria,” (p. xi) instead laying out a propaganda model of the media where choices are influenced by systematic filters, such as the profit orientation of the media industry. Others, such as Gitlin (1980) argued that norms of objectivity only acted to reinforce the “dominant hegemony,” or the world view of those in power.

Attacks on objectivity have tended to peak during wartime. From World War II to the Vietnam War, and the more recent “War on Terror,” the discovery of

government “lies” or manipulation has led journalists to become more suspicious of official sources of information (e.g., Schudson, 1978, Lewis & Reese, 2009).

Objectivity also comes into question with the onset of new forms of media. “One of the great truths of journalism history is that when older news media are threatened by newer ones, an intense debate over the nature of news ensues, followed by an era of retrenchment and change,” Mindich writes (p. 2). Tensions arose when radio threatened the newspaper monopoly in the 1920s, when television challenged newspapers and radio starting in the 1940s, and again when cable TV and the Internet took market share away from newspapers and broadcast media starting in 1990s. Each time, the newcomer was disparaged for not engaging in “real” journalism. The ongoing online revolution and the disintegration of traditional media empires represent the latest manifestation of this trend. “Given historical patterns, it is no surprise that the nature of news and ‘objectivity’ should once again become an issue so important to the profession,” Mindich says (p. 5).

The blogosphere also has provoked much recent hand-wringing over objectivity. Some recent observers have even declared objectivity to be dead (Gillmor, 2005), perhaps replaced by new mantras, such as “transparency is the new objectivity” (Weinberger, 2009). Bloggers have attacked the mainstream press for using the “veneer of objectivity” to create “false balance” and then fail the public “by never determining ‘who’s right and who’s wrong’” (Vos, Craft & Ashley, 2010, p. 23).

Journalists themselves openly wrestle with the notion of objectivity. Some say it should be abandoned because it is a trap (e.g., Cunningham, 2009). Others say

the notion of objectivity is slippery and challenging, yet they still defend it and strive for it (e.g., Carpentier & Trioen, 2010). Some reject the idea of pure objectivity but say the concept should be refashioned (e.g., Klotzer, 2009; Meyer, 2004b). Some say it is impossible to achieve, but they still hold up the concept as a goal, “like the North Star... a fixed mark to help journalists stay on the right course” (Mindich, p. 10). Some insist objectivity is more important now than ever (e.g., Morton, 2010). An informal query posted to the author’s Facebook page asking friends to define objectivity in journalism prompted 28 responses, including “rare,” “dead,” “obsolete,” “unlikely,” “a noble goal – one worth striving for,” “still alive and well in some circles” and “what makes a real journalist” (personal communication, 2010).

Given the troubled past and turbulent present of the objectivity norm, determining how environmental journalists interpret objectivity for themselves is one of the central goals of this research.

As part of this effort, the author broke the concept of “objectivity” into various components that then provided the basis for research questions. These components are presented below.

#### **4c. Deconstructing “Objectivity”**

Based on a synthesis of the literature, the author identified nine dimensions of traditional journalistic objectivity. Some of these dimensions are values, such as fairness and impartiality, and some are routines, or work practices that journalists

use to uphold the norm of objectivity. Quoting authoritative sources is an example of a routine. These dimensions are intended to cover the most important elements of objectivity and provide a sound theoretical basis for research questions.

### **i. Quoting Authoritative Sources**

One of the ways in which journalists attempt to be objective is to build their stories on outside sources, rather than their own opinions. Sources provide journalists with the “5 Ws” – the who, what, where, when and why – that are the essential components of news stories. Sigal (1973) noted a heavy reliance on official government sources. This practice of using sources deemed authoritative helps to build what Tuchman (1978) described as a “web of facticity.” “As long as information is attributed via either a quotation or a paraphrase to a source, then the reporter’s objectivity – or detachment from the information – can be maintained and explicitly proved,” Gilligan wrote (2007, p. 8).

### **ii. Balance**

Balance is another important aspect of traditional objectivity. According to Mindich (1998), by the last years of the 19<sup>th</sup> century, journalists had embraced the idea that “reality lies between competing truth claims” (p. 14). Tuchman (1972) identified “presentation of conflicting possibilities” – or telling “both sides of the

story” – as one of several strategic rituals designed to convey objectivity (p. 665).

The principle of balance remains a staple in modern journalism textbooks, such as this instruction from Harrower’s *Inside Reporting* (2007): “Every reporter must learn how to ... balance sources for fairness, to represent all sides of every issue” (p. 68).

### **iii. Facticity**

Facticity is another element of objectivity. Tuchman (1978) described how journalists accept “facts” from legitimated institutions to spin a “web of facticity” that supports a story as an “objective” view of reality. For journalists, facts generally must be attributed to news sources. “Attributing facts and opinions to their sources shows readers that you’re *reporting* what’s been said, not saying it yourself,” Harrower’s textbook says (p. 69). Another popular journalism primer, Rich’s *Reporting and Writing News* (2007), instructs students to always attribute facts to sources unless events were witnessed first-hand or are “common knowledge or indisputable” (p. 30).

### **iv. Impartiality**

Impartiality is another aspect of objectivity. It generally means a lack of affiliation with any particular group. In journalism, it specifically refers to

independence from political parties, a trait cultivated by the penny press starting in the 1830s (e.g., Mindich, 1998). Nonpartisanship in journalism can also mean freedom from conflicts of interest – entanglements that may cause ethical dilemmas for reporters. For example, the Society of Professional Journalists' Code of Ethics says that "journalists should be free of obligation to any interest other than the public's right to know." The code tells reporters to "act independently" and "avoid conflicts of interest, real or perceived" (Society of Professional Journalists, 1996).

### **v. Neutrality**

Neutrality is a related concept in journalism. The dictionary definition of "neutral" is "not taking part or giving assistance in a dispute or war between others," such as a neutral nation during World War II (Dictionary.com, 2010). Being neutral has to do with *not getting involved* – being disinterested or detached.

Mindich (1998) cited detachment, developed in the 1830s and 40s, as one of five components of objectivity. It lives on today in exhortations for journalists to avoid getting involved in stories they cover – whether that means newsrooms banning reporters from attending comedian Jon Stewart's rally (Hastings, 2010) or reporters choosing not to give money to the United Way because their newspaper does stories on the charity. The rule about not getting involved traditionally can be broken only in cases of an immediate threat to life – for example, a photographer would stop taking pictures and dive into the water if he could save a drowning

person (Carson, 2010).

## **vi. Avoiding Opinion in Newswriting**

Another aspect of objectivity is keeping the reporter's opinion out of news stories. Schudson wrote, "The belief in objectivity is a faith in 'facts,' a distrust of 'values' and a commitment to their segregation" (1978, p. 6). Tuchman (1972) identified several ways that journalists attempt to keep opinions out of news stories, or at least make it seem so. One way is to quote other people, thus attributing to others thoughts that journalists themselves may hold. Another is to label a story as "news analysis," meaning that it contains the reporter's interpretation of facts based on his or her professional judgment.

The Society of Professional Journalists' Code of Ethics refers to both these points when it says, "Distinguish between advocacy and news reporting. Analysis and commentary should be labeled and not misrepresent fact or context" (1996).

## **vii. Fairness**

Fairness is another dimension of objectivity. It means being "free from bias, dishonesty, or injustice" (Dictionary.com, 2010). Fairness is closely tied to balance in that it often refers to accurately telling "all sides" of a story. The Society of Professional Journalists' Code of Ethics says, "Journalists should be honest, fair, and



courageous” in their work. This includes testing the accuracy of information and letting news sources respond to allegations of wrongdoing.

“Reporters believe that if they strive for balance and fairness in their stories, this will demonstrate their objectivity; it is the effort to produce balanced and fair stories that creates and substantiates a reporter’s objectivity,” Gilligan wrote (2007, p. 10). “By structuring stories with opposing points, a sense of balance is evident while an attempt at fairness, to the points included, also is maintained.”

### **viii. Straight News Writing**

The inverted pyramid style of writing – putting the most important facts first, followed by less important ones – has been recognized as an early hallmark of objective writing (e.g., Mindich, 1998). Some say the practice arose when reporters filed dispatches from the Civil War and wanted to avoid having essential parts of the story cut off by temperamental telegraph machines (e.g., Harrower, 2007). Others see the form as a product of the obsession with facts that dominated the newsrooms at the end of the 19<sup>th</sup> Century (Schudson, 1978, Mindich, 1998). Regardless, the inverted pyramid has been a cornerstone of newswriting for more than 100 years. Journalists can point to this method of structuring information in an appropriate sequence as evidence of their objectivity, Tuchman says (1972). The counterpart to this “hard” news story is a “soft” news story, also known as a feature story.

## **ix. Addressing Criticism**

Tuchman (1972) said that journalists use objectivity as a “strategic ritual” to shield themselves from the hazards of their trade, such as deadline pressures, possible libel suits and criticism from superiors. When confronted with complaints, journalists can point to specific “objective” procedures they followed – for example, including supporting facts, using quotes, or giving conflicting sides of the story. In other words, journalists can say: “I don’t make the news. I just report it.”

### **4d. Transparency**

Transparency is a relative newcomer to the objectivity discussion. The rise of the Internet, the increasing reach of bloggers, the demise of once-powerful news organizations and the fragmentation of the audience have prompted soul-searching among the media. Can journalists regain their stature – and their subscribers? Some have suggested transparency is an important step in that direction. Rather than pretending that journalists have no opinions, biases or faults, instead be honest about them.

Talk of transparency has grown throughout society. The Internet has radically improved information sharing, revolutionizing the way people communicate with each other and the media. As *The Cluetrain Manifesto* put it, businesses must “get a clue” that they no longer control the marketplace; the public

does (Levine et al., 1999). This new worldview includes the legacy mainstream media. “Big Media has lost its monopoly on the news, thanks to the Internet,” Gillmor wrote in *We the Media* (2004).

The essence of transparency is openness, and as such, it is sometimes viewed as an antidote to the ills of traditional objectivity (e.g., Weinberger, 2009). Media critics and journalism organizations increasingly cite transparency as a goal. For example, in 1997 the Committee of Concerned Journalists laid out nine principles for journalists, which later became the basis for the classic book, *The Elements of Journalism* (Rosenstiel & Kovach, 2001). The principles included two statements urging journalists to be transparent about sources and methods. In 2004, participants at the Aspen Institute Conference on Journalism and Society said the media faced a “credibility gap” and advocated that newsrooms be “as transparent as practical” in explaining to the public how stories are reported and how the organization operates (Aspen Institute, 2005).

In 2009, Weinberger, one of the *Cluetrain Manifesto* authors, declared that “transparency is the new objectivity.” He explained on his blog:

The problem with objectivity is that it tries to show what the world looks like from no particular point of view, which is like wondering what something looks like in the dark. Nevertheless, objectivity — even as an unattainable goal — served an important role in how we came to trust information and in the economics of newspapers in the modern age. ... What we used to believe because we thought the author was objective we now believe because we can see through the author’s writings to the sources and values that brought her to that position. Transparency gives the reader information by which she can undo some of the unintended effects of the ever-present biases. Transparency brings us to reliability the way objectivity used to.

Transparency may be practiced at several levels (Moore, 2009). For example, news producers can explain what they do, by sharing the process of gathering and constructing stories, or of making editorial decisions, such as election endorsements. On another level, conflicts and biases are disclosed: News organizations can disclose institutional biases and financial conflicts. Individual journalists can disclose personal experiences, attitudes and beliefs that influence their work (e.g., Weinberger, 2009). Newsrooms also can engage with the public about the news process, thereby letting the audience have some control over the conversation. All of these methods might be called “disclosure transparency.” Then there is what can be called “participatory transparency” (Moore, 2009), which lets the public participate directly in the process of creating or critiquing the news.

When discussing transparency in journalism, it is important to distinguish among these levels. Some journalists are comfortable with one level, but not with another.

## **5. LITERATURE REVIEW**

### **5a. Coverage Prior to 2005**

Media coverage of climate change has come under intense scrutiny in recent years, notably by scholars, bloggers, activists and even journalists themselves. Many studies concerning climate change and other environmental topics have focused on the way that such stories are framed or balanced, often with negative conclusions. Other studies have looked at how media coverage of global warming has changed over time. Prior to about 2005, these studies consistently found that media coverage of climate change focused on scientific uncertainty and controversy. Some found that coverage of the issue followed a natural boom-and-bust cycle; others suggested the media's tendency to focus on controversy was part of a conscious or subconscious appeal for readers' attention.

Several of these studies used the model Downs proposed in his 1972 article, "Up and down with ecology: The issue-attention cycle." Downs' model has been used to explain the cyclical nature of environmental coverage in general.

Downs theorized that a given issue will typically go through five stages of life. First, the pre-problem stage exists when a social problem occurs but hasn't yet captured much public attention. Second is the alarmed discovery phase, when the public becomes aware of the problem and reacts enthusiastically to solving it. Third, the public realizes the high cost of solving the problem. Fourth, there is a gradual

decline of interest, and fifth, there is a prolonged limbo of lesser attention punctuated by occasional recurrence of interest.

Trumbo (1996) used Downs' model to examine global warming coverage from 1980 to 1995 in five major U.S. papers, *The New York Times*, *The Washington Post*, *The Los Angeles Times*, the *Christian Science Monitor* and *The Wall Street Journal*. Trumbo looked at the frame used in each story (defined as problems, causes, moral judgments and remedies) and the sources quoted (scientists, politicians and interest groups). He found that coverage of global warming roughly followed Downs' attention cycle, as it dramatically increased in 1988 and then decreased in the mid-1990s, shifting from stories that focused on problems and causes to ones that made judgments and proposed remedies. Trumbo also found a decline in scientists as sources in the latter stages of the cycle, as the issue became increasingly politicized.

Similarly, McComas and Shanahan (1999) examined global warming coverage from 1980 to 1995 in two newspapers, *The New York Times* and *The Washington Post*. In keeping with Downs' theory, the authors found an upswing in the number of stories leading up to 1989 and then a leveling off. The frame of the stories shifted from an emphasis on the dangers and consequences of climate change to an emphasis on scientific controversy. The authors departed from Downs, however, in arguing that ups and downs in attention cycles are not inherent to environmental issues, but rather, that the media actively construct a narrative to keep audience interest. "To complicate the plot and sustain drama, scientific disagreements

received greater attention as opposing interests sought to establish doubt” about the veracity of global warming, they wrote (p. 51).

Shanahan and McComas returned to the subject in 2004 in a study comparing coverage of global warming in the United States and France (Brossard, Shanahan & McComas, 2004). Analyzing 10 years of coverage (1987-1997) in *The New York Times* and the French newspaper *Le Monde*, they found that the American newspaper emphasized conflict between scientists and politicians, while the French newspaper focused more on events and international relations. *The New York Times*’s coverage comported with Downs’ issue-attention cycle but *Le Monde* coverage did not, suggesting that the up-and-down cycle may be a uniquely American phenomenon. The authors also said that cultural influences affected coverage: French media tend to write from an opinionated perspective, whereas American journalists are keen on “objectivity” and seek divergent viewpoints to maintain the appearance of fairness.

In another view of global warming coverage, Zehr (2000) looked at stories from 1986 to 1995 in the popular press, using articles from *The New York Times*, *The Wall Street Journal*, *The Chicago Tribune*, *The Los Angeles Times* and magazines. Zehr did not use Downs’ attention cycle, and unlike the other studies, he did not try to quantify the minor themes found in the stories. Instead, Zehr found that scientific uncertainty was a major salient theme throughout the coverage. In many stories, uncertainty itself was the main topic. Recurrent examples involved the use of scientific controversy, the emergence of new research, and introducing new

elements of the problem. Zehr argued that the effect of these articles was to create an artificial boundary between scientists and the lay public, suggesting that the public should wait to act until scientists decided the matter. Zehr added that most science journalism does not focus on uncertainty, but rather tends to de-emphasize disagreement. "Whether the global climate change case is an exception to this tendency or whether journalists' and scientists' practices have recently changed are unanswered questions," he writes (p. 90).

Antilla (2005) continued the focus on controversy and skepticism in climate change coverage with a review of one year's news coverage in 255 U.S. newspapers from March 2003 to February 2004. The study examined the frame the media used in reporting on 32 different scientific studies. The author found that two-thirds of the stories constructed the science as "valid," meaning they did not include the views of "skeptics." The remaining third of the stories framed the science as "non-valid," portraying it as ambiguous, uncertain or controversial. While most stories were framed as valid science, the author suggested that questions were raised about scientific credibility often enough as to create "substantial confusion" among readers (p. 344).

A more recent study of climate change coverage, Liu, Vedlitz and Alston (2008) analyzed coverage in a regional newspaper, *The Houston Chronicle*, from 1992 to 2005. The authors noted that this time frame ended with greater scientific consensus among climate scientists, as well as two major hurricanes that focused attention on global warming. In terms of issue salience, the authors found that



coverage of global warming generally increased over time. The number of stories peaked surrounding three noteworthy events: the Kyoto Conference in 1997, the Bush Administration's decision to abandon the Kyoto Protocol in 2001 and Hurricanes Katrina and Rita in 2005. About three-quarters of stories portrayed climate change as harmful, but a fair number portrayed its impact to be not harmful, mixed or undetermined. In terms of relationships with other issues, global warming was portrayed most often as a science research and development story, consistent with earlier studies finding scientific uncertainty was a major theme.

Boykoff has conducted several studies regarding climate change media coverage and has become regarded as a leader in this field. In a frequently-referenced work, "Balance as bias: global warming and the U.S. prestige press," Boykoff and Boykoff (2004) conducted a content analysis of global warming coverage in four major American newspapers, *The New York Times*, *The Washington Post*, *The Los Angeles Times* and *The Wall Street Journal*, from 1988 to 2002. They found that the media tended to give equal weight to those who denied climate change and those who affirmed it, despite the fact that the vast majority of scientists believed it was happening. Stories also tended to give a balanced view of what should be done about climate change, equating the views of the minority who preferred study or delay with the majority who sought immediate action.

The authors noted the emergence around 1990 of a small group of influential spokespeople and scientists who refuted evidence of global warming, many of whom were later revealed to be funded by the fossil fuel industry. Journalists used

these “skeptics” as sources to provide a seemingly balanced account of the climate change story. By giving equal weight to these contrarians, however, journalists gave the false impression that the scientific community was equally divided. In turn, this media coverage provided support for U.S. politicians who opposed signing the Kyoto Protocol or taking other steps to curb climate change.

The study found:

In the end, adherence to the norm of balanced reporting leads to informationally biased coverage of global warming. This bias, hidden behind the veil of journalistic balance, creates both discursive and real political space for the U.S. government to shirk responsibility and delay action regarding global warming (p. 134).

Meanwhile, emerging science continued to point to the existence of anthropogenic climate change. Writing in the journal *Science*, science historian Oreskes (2004) addressed the assertion that climate science is highly uncertain by evaluating 928 studies on climate change published in peer-reviewed scientific journals between 1993 and 2003. She found that not a single paper disagreed with the IPCC’s conclusion that human activities have increased the concentration of greenhouse gases in the atmosphere, leading to global warming. “Politicians, economists, journalists and others may have the impression of confusion, disagreement, or discord among climate scientists,” she wrote, “but that impression is incorrect” (p. 1686).

## 5b. Changes After 2005

The year after the Boykoff and Boykoff study was published, the journalism trade publication *Nieman Reports* devoted an entire section of its Winter 2005 issue to coverage of global warming (*Nieman Reports*, 2005). The issue included a new commentary by Boykoff, along with articles by other scholars and journalists.

Boykoff (2005) argued that journalists had distorted the scientific consensus by granting roughly equal space to dissonant scientists who said global warming is not happening or is not caused by humans. He said newsroom cutbacks had contributed to the problem because there were fewer specialized science writers available to cover the issue. He also pointed out that scientists tended to use cautious language when describing their research, which is difficult for reporters to translate into straightforward news texts. Boykoff urged individual journalists to improve their coverage, now that a pattern had been recognized.

Gelbspan, a retired newspaper journalist who oversaw a Pulitzer Prize-winning project at *The Boston Globe*, wrote about his frustration with the quantity and quality of climate change coverage (2005). The year before, Gelbspan had published a book, *Boiling Point: How Politicians, Big Oil and Coal, Journalists and Activists Have Fueled the Climate Crisis – and What We Can Do to Avert Disaster* (2004). He said that the fossil fuel lobby had been very effective in its disinformation campaign, duping reporters into quoting a few dissenting scientists who deny the reality of global warming. Gelbspan deemed such journalistic balance

“profoundly distorted,” “irresponsible” and “a violation of trust” (p. 78-79). He suggested that truly balanced stories should:

reflect the relative weight of opinion in the scientific community. If that happened, the views of mainstream climate scientists would be the focus of 95 percent of the story, while the dissenters’ views would be mentioned less prominently and less often. This is beginning to happen – although very belatedly (p. 79).

Scholar and science writing specialist Dunwoody (2005) expanded upon that idea by suggesting an alternative to the old balanced approach: “weight-of-evidence reporting.” Dunwoody acknowledged Boykoff’s findings, but she urged respect for the norms of objectivity and balance. These norms, she argued, have evolved as “truth surrogates” (p. 90) because it is almost impossible for journalists to determine what’s really true in any contentious situation. The norm of objectivity provides that a journalist has done a good job if he or she accurately translates a source’s claim. Balance provides that a journalist has done a good job if he or she provides competing truth claims for the public to consider. These norms can be misleading, however, because media coverage can legitimize a potentially false claim in the public eye. As an alternative, Dunwoody offered the notion of “weight-of-evidence reporting,” which would not ask journalists “to determine what’s true but, instead, to find out where the bulk of evidence and expert thought lies on the truth continuum and then communicate that to audiences” (p. 90). This method would provide a more accurate picture for audiences while letting journalists maintain their norms of objectivity and balance, she said.

In light of all this discussion, did journalists shift their reporting? There is evidence that noteworthy changes occurred around this time.

Boykoff published another study in 2007, “Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006” (2007a). Returning to the same four prominent newspapers he had studied earlier, Boykoff noticed a marked shift in coverage. In 2003-2004, U.S. newspapers reflected a significant portion of explicitly “balanced” accounts, but in 2005-2006, the vast majority of stories more closely reflected the scientific consensus. (By comparison, the U.K. press reflected the scientific consensus the entire time.) Boykoff suggested several reasons for the shift: new political developments such as President George W. Bush’s statement that humans were contributing to climate change, new scientific evidence buttressing climate change, and the landfall of Hurricane Katrina, which prompted widespread discussion about the impact of climate change. Boykoff concluded that the “false balance” of the past was no longer evident, and this was reason for optimism, but he cautioned that the issue was far from settled.

Further exploring the subject that same year, Boykoff (2007b) combined his content analysis of newspapers with selected television reports and structured interviews with 40 scientists and journalists. The interviews pointed to several reasons why the story had been framed as a controversy: 1) the effectiveness of climate change “skeptics,” and 2) challenges in translating scientific uncertainty to the public. Scientists tend to speak in uncertainties, whereas journalists value clear

statements. Scientists tend to work over the long term; journalists think in terms of breaking news. Scientists go through extensive peer review that mitigates errors, whereas journalists negotiate with editors but newsroom norms promote conflict instead of minimizing it.

Also in 2007, the IPCC published its most recent report on climate change, which summarized existing scientific research. It said that warming of the climate system was “unequivocal,” as evidenced by increasing air and ocean temperatures, widespread melting of snow and ice and rising sea level. The report said these changes were “very likely” due to human activities – a more decisive statement than the “likely” statement of 2001. The report added that warming would continue even if greenhouse gas concentrations were held to 2000 levels (IPCC Fourth Assessment Report: Climate Change 2007).

What is the current status? Boykoff published an update in the February 2010 issue of *Extra!*, a magazine published by Fairness & Accuracy in Reporting. Summarizing his earlier findings, Boykoff (2010) noted that coverage in the U.S. prestige press had changed significantly, but the media still refer to the climate change “debate,” a term he found misleading. Boykoff also found abundant evidence for the false balance problem on television newscasts such as *ABC World News Tonight*.

Both Boykoff (2010) and Block (2010) cited evidence that the “balance as bias” distortion was alive and well in the coverage of “Climategate” – the controversial e-mails hacked from climate scientists at East Anglia University in late

2009. Critics paraded the stolen files as evidence that climate change was a fraud.

Block noted that the Associated Press dissected the 1,000-plus e-mails, concluding there was no evidence of fraud, but most media outlets simply reported the story in “he said – she said” fashion, without trying to determine the truth. Block wrote:

Before Climategate, most reporters and editors stopped covering climate change as a scientific controversy, but the episode tested whether journalists truly understood climate science. The widespread willingness to regard it as a matter of political debate, with two sides deserving equal attention, reflected a lack of journalistic progress.

Block also quoted Boykoff as saying that coverage of the 2009 Copenhagen U.N. Climate Summit mostly reflected “classic journalism norms of drama” between competing countries.

Block cited several polls indicating that people in the U.S. are barely concerned about climate change, compared with those around the world. A 2009 Pew Global Attitudes poll that found that only 37 percent of respondents in the United States said climate change is a “very serious problem” (Pew Global Attitudes, 2009). This put the U.S. third from last among the countries for level of concern [see Fig. 2, “Climate Change Is a Very Serious Problem”]. A 2009 World Public Opinion poll of people in 15 countries similarly found U.S. respondents to be among the least concerned about climate change. Only 31 percent of respondents in that poll said climate change was a serious problem, compared with a 59 percent average worldwide (World Public Opinion,

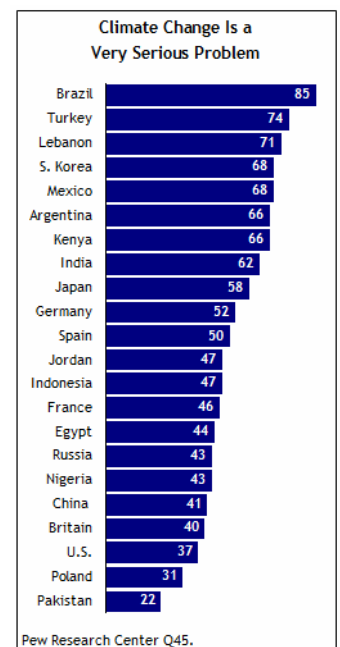


Fig. 2. Source: Pew Global Attitudes, 2009.

2009). Block quoted the research director of the World Public Opinion poll as blaming the difference on the U.S. news media, with its regular print and broadcast editorials undermining climate science.

In addition, one segment of the media still vocally supports climate change skepticism – television meteorologists. In the *Columbia Journalism Review*, Homans (2010) told the story of how John Coleman, the first weatherman on ABC's Good Morning America and the founder of The Weather Channel, became a cause célèbre on right-wing programs by pronouncing in 2007 that "global warming is a scam." Many fellow weather forecasters still agree. A recent national survey of certified television weathercasters (Maibach, Wilson, & Witte, 2010) found that only about half indicated that global warming is happening, and only about a third thought that it was caused mostly by human activities. Just over a quarter agreed with the statement that global warming is a scam. As far as reporting, 79 percent of respondents said that coverage of climate change science must reflect a "balance" of viewpoints.

Climate change "skeptics" continue to accumulate scorn in some quarters. Oreskes partnered with Conway to write *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (2010). The book chronicled how a small number of individuals successfully undermined mainstream science on the dangers of DDT, tobacco smoke, acid rain and global warming. The publisher's description of the book says:

Remarkably, the same individuals surface repeatedly—some of the same figures who have claimed that the science of global warming is



“not settled” denied the truth of studies linking smoking to lung cancer, coal smoke to acid rain, and CFCs to the ozone hole. “Doubt is our product,” wrote one tobacco executive. These “experts” supplied it ([www.bloomsburypress.com](http://www.bloomsburypress.com)).

### **5c. Environmental Journalists**

In addition to looking at studies of media coverage of climate change, it is worthwhile to understand the journalists who write these stories. Several researchers have devoted attention to reporters covering the specialty beat of the environment. These studies are noteworthy for insights about the journalists who produce climate change stories.

Detjen et al. (2000) mailed surveys to about 1,000 journalists covering environmental issues full-time or part-time at news outlets nationwide in 1996. About 62 percent were male and 38 percent were female. By workplace, 24 percent worked for television stations, 2 percent for radio, 55 percent for print media, and 19 percent were unknown. Most of these journalists were not full-time on the beat. Problems identified included lack of resources for research and travel and a lack of time to dig into stories.

Sachsman et al. (2006) studied environmental reporters across four regions covering 28 states, conducting a detailed census of 354 newspaper and television journalists who covered the beat regularly. These journalists were typically veteran reporters, with more than 13 years in the field and at least seven years on the beat, and an average age of almost 40 or more. Sachsman noted, “Specialized reporting

assignments, such as covering the environment, often go to more experienced reporters” (p. 101). Environmental journalists were almost twice as likely as the typical U.S. journalist to have an advanced degree (p. 114) and were overwhelmingly white (98 percent, compared to 90 percent of all journalists). Like U.S. journalists in general, they were mostly male.

Concerning objectivity, respondents were almost unanimous in saying that environmental reporters need to be as objective as any other reporter, but nearly a third said they should sometimes be advocates for the environment. There was strong agreement that environmental journalists should be fair to both businesses and environmental activist groups (p. 111). Across all four regions of the U.S., respondents were split on whether environmental reporters were too “green,” or biased in favor of environmentalism, with 38 to 46 percent of respondents agreeing with that statement. More than 90 percent of respondents in all regions said reporters were not biased in favor of industry (p. 112).

Palen (1999) focused specifically on objectivity in his article about the creation of the Society of Environmental Journalists, a professional organization whose members include some of the top climate change reporters in the United States. The group’s founders felt it was important to steer clear of influence from environmental advocacy groups and industry. Full membership was limited to working journalists. SEJ originally tried to review members’ work for objectivity, but eventually settled on criteria that prohibited members from being paid for lobbying or public relations work for an advocacy organization. As Palen writes, this

compromise spoke to a functional definition of objectivity as independence from vested interests, as opposed to neutrality of opinion.

McCluskey (2008) specifically mentioned the Society of Environmental Journalists as an important resource in developing a professional identity as an environmental reporter. These journalists can be highly socialized through the SEJ listserv and conferences, leading them to develop a “different mindset” (p. 85) that can become a kind of group-think. Environmental journalists, like other beat reporters, can also become ambassadors for their sources. SEJ membership was considered as a factor in the current research.

Studies examining the often-contentious relationship between scientists and journalists may also help explain some of the confusion and criticism surrounding climate change coverage. For example, Reed (2001) found that scientists and journalists both strive for their own versions of “accuracy” and “objectivity.” But scientists view their work as technical, neutral and apolitical, whereas journalists value individualism, creativity, and skepticism of authority – even of scientific findings. From the scientists’ perspective, journalists tend to oversimplify scientific ambiguity and focus on inappropriate angles as “news hooks” to catch readers. Reed noted that these tensions between scientists and journalists are decreased with specialized science writers, who better understand the language and the culture of science. This suggested that the current research may find more scientist-oriented attitudes and values among environmental journalists who have had more training, experience or exposure to scientists in the field.

In addition, it is important to see environmental reporters as members of the larger press corps, subject to the same pressures and stresses. The past decade has been a time of extreme turbulence in the industry in which newsrooms shrank and demand for Internet content grew. The most recent American Journalist survey (Beam, Weaver, & Brownlee, 2009) found that journalists reported a decrease in professional organization membership, a decrease in professional autonomy, and a more cautious approach toward ethically controversial reporting practices in the wake of major upsets such as the Jayson Blair fabrication/plagiarism scandal. The study paints a picture of journalists as professionals under increasing stress – factors that surely influence the subjects of the current study.

Taken together, these studies find that environmental journalists feel passionately about environmental issues and sometimes feel conflicted about the need for maintaining traditional standards of “objectivity.” This research helps situate the research subjects within their work milieu, giving context to their decision-making process.

#### **5d. Summary of Literature**

In summary, studies analyzing climate change coverage between have found that the media frequently focused on scientific uncertainty over the existence of, cause of, effect of and responsibility for climate change, especially from 1980 through approximately 2005. Researchers have portrayed these coverage trends

variously as inherent to the life-cycle of environmental issues, as deliberately constructed to maintain audience attention, as the result of manipulative industry PR campaigns, or as a well-intentioned but misleading attempt to adhere to journalistic norms of objectivity. Boykoff (2005) summed up the latter line of research by calling attention to the “balance as bias” problem he observed when journalists gave the same weight to the views of a few climate change “skeptics” as they did to the majority of peer-reviewed scientists.

This trend appeared to change after 2005. Boykoff (2007 and 2010) found that the “balance as bias” phenomenon was no longer statistically significant in major U.S. newspapers after 2005. These stories had largely shifted from frame of controversy and uncertainty to one of greater scientific consensus, harmful consequences and a call for action. However, there is some evidence of the issue persisting on specific stories, like the “Climategate” flap (Boykoff, 2010; Block, 2010), or among certain subsets of the media, like television weathercasters (Maibach, Wilson, & Witte, 2010).

The current research set out to examine environmental journalists’ insights and have them discuss these noteworthy changes. Responses can be considered in light of past research findings. If scientific uncertainty is no longer a major theme, does that tell us that the media have reached some conclusions about scientific validity? If the media have stopped quoting climate change “skeptics,” does that mean that reporters have abandoned “objectivity,” or have they redefined it? This

research considered coverage of both science and policy stories about climate change, which turned out to be an important distinction.

Objectivity is a particularly meaningful value for environmental reporters, who tend to be sensitive to avoiding the appearance of advocacy in their work lest they appear too “green” (e.g., Sachsman et al., 2006). Listening to those reporters talk about the norm of objectivity helps explain how it shapes their work.

Ultimately, it is important to understand media coverage of climate change, not only because of the implications for journalistic values and routines, but also because the issue is of great significance to people around the world.

To review, the question this research addressed is: How do environmental reporters for mainstream print and online media understand the occupational norm of objectivity as applied to coverage of climate change, and how has that changed in the past five to 10 years?

## **6. METHOD**

### **6a. Qualitative Interviews**

This research was conducted using qualitative methods, which are interactive, humanistic, and fundamentally interpretive (Creswell, 2003). Qualitative research views social phenomena holistically, developing an understanding as the research progresses (Creswell, 2003). It is also sensitive to the role of the researcher and his or her biases, views and interests (Creswell, 2003). The focus is on the participants' perceptions and experiences (Fraenkel & Wallen, 1990). Researchers try to understand the process as much as the outcome; how things happen is as important as what happened (Fraenkel & Wallen, 1990).

The primary method for conducting this research was in-depth interviews. Advantages of interviews include that they do not require participants to be observed directly, they allow participants to provide historical information, and they allow the researcher to control the line of questioning. Disadvantages are that the information provided is indirect and may be biased by the participant or the interviewer (Creswell, 2003). Methods Creswell suggests to validate the accuracy of qualitative research include triangulating different data sources to build coherent justification for themes; using rich, thick description to convey findings; and clarifying the bias the researcher brings to the study through open self-reflection (Creswell, 2003, p. 196). In *The Long Interview*, McCracken addresses ways to avoid

common pitfalls, including avoiding the leading question and deliberately “manufacturing distance” between interviewer and interviewee by deconstructing cultural assumptions behind the study (McCracken, 1988, p. 23). These techniques are particularly important for this study, in which the researcher was familiar with both the topics and the subjects.

In-depth interviews are popular in media research because they can be used to probe feelings and perceptions. Many studies have used this method to analyze the work of journalists and try to illuminate their own understanding of their role in producing the news (e.g., Luscombe, 2009; Usher, 2009; Greenberg, Thomas, Murphy & Dandeker, 2007; Sumpter, 2000). Subjects are given the opportunity to reflect on their experiences and offer anecdotes, critiques and rationales. Interviews provide a window into the mind of the journalist at work and help explain why journalists do the things they do.

## **6b. Ethical Issues**

Researchers must be aware of their own assumptions and biases when conducting any research, but particularly qualitative research, because it relies heavily on the researcher’s own interpretation. In the case of the current research, the author’s own experience as an environmental reporter shapes her perceptions. As mentioned earlier, the germ of the idea for this research came when the author was a reporter for a major Midwestern newspaper, and her editors demanded that



her stories on climate change contain a “balanced” account of the controversy. The author’s perception is that environmental reporters are sensitive about their credibility with their audience and their employers, and they use the standard of objectivity to enhance that credibility.

Some of the journalists who were invited to participate in this research are acquaintances, friends or former colleagues. The universe of environmental journalists is small, and many are members of the same organization, the Society of Environmental Journalists, a group from which the author drew most of her subjects. Her personal experiences and relationships may necessarily color her views, but she vowed to do her best to retain her own professional objectivity when conducting this research.

To ensure ethical conduct in this study, the author sought approval from the Institutional Review Board at the University of Missouri-Columbia. Participants were informed of the purpose and potential risks of the study. Subjects also were permitted to maintain confidentiality, with their identities being protected. In addition, subjects were provided transcripts of their own interviews upon request and a copy of the final interpretation of data.

### **6c. Study Design**

**Who:** The author proposed interviewing 10 to 12 environmental news reporters who have covered climate change for at least five years. The final count of

research subjects was 11. Subjects were news reporters – those who report and write news stories – as opposed to editors or editorial writers. The author used the membership list of Society of Environmental Journalists, a professional group, as the starting point for identifying subjects, but membership in SEJ was not a criterion for inclusion. She sought to include some of the most prominent reporters covering climate change as well as some lesser-known journalists.

This study involved reporters for mainstream print publications, defined as newspapers, magazines or online publications, including general news websites. Mainstream means publications that cover a variety of news subjects on a regular basis for a general audience. Traditionally, these mainstream media publications have had a policy of objective news reporting. Advocacy publications, such as magazines published by environmental groups or industry groups, were excluded from this study. Online publications were included because a number of newspaper reporters who were recently laid off now work at start-up news websites. Reporters for print publications were the focus because they make up the bulk of the professional environmental journalism corps (Detjen, 2000; Sachsman et al., 2006).

Potential subjects were gleaned from reading daily climate change stories to see which reporters were actively covering the beat. Participants were solicited through e-mail or direct personal contact. The number of 10 to 12 participants was selected to allow for ample discussion of various issues involved.

Because some reporters might have been reluctant to share their personal opinions, the author emphasized the confidentiality of the participants and the value

of this research to both academia and practicing journalists. She promised not to disclose the names of the reporters or their publications, instead using terms like “a major Midwestern newspaper” as needed. Any direct or indirect quotes from interviews or references to subjects’ stories were done in such a way as to maintain confidentiality.

Subjects were informed of their rights and potential risks. Participants signed a consent waiver approved by the University of Missouri-Columbia Institutional Review Board. Please see *Appendix I, Informed Consent Waiver*, for the form.

**Where:** Because these reporters were located around the country, the most practical and cost-effective way to conduct the interviews was over the phone and/or by Skype, with some e-mail follow-up.

**When:** The interviews took place during the fall of 2010. The research paper was written during the fall of 2010.

**Duration:** Detailed interviews took about 60 to 90 minutes. Since reporters are typically pressed for time, the author allowed for multiple occasions to complete an interview, if needed.

**Stimuli:** In advance of the interview, the author asked participants to provide up to three of their own articles from the past five to 10 years that were representative of climate change coverage at that time. Selecting articles for discussion helped refresh participants on some of the changes that have occurred in recent years. The articles also helped spark discussion. These articles were collected as artifacts and used to provide context for the analysis.

**Background Questionnaire:** Basic information about the subjects was gathered through a written questionnaire administered prior to the interview. Reporters were given the option of submitting a resume in lieu of filling out job data. Please see *Appendix II, Background Questions for Study Participants*, for a list of questions.

**Questions:** The interviewer asked participants a series of open-ended questions to stimulate discussion on the topic of how global warming coverage has changed in the past five years. Please see *Appendix III, Interview Questions*, for a list of key questions.

**Recording:** Interviews were recorded with audio equipment, and the subjects were notified of this. Notes also were taken by hand or typed on a computer during the interview.

**Analysis:** Interviews were reviewed throughout the research process to refine the line of questions for future subjects. Each interview was transcribed and summarized and the major themes highlighted. Following completion of all interviews, the researcher reviewed the interviews and grouped together major themes that emerged during the course of the research. These themes were evaluated in light of theory, existing literature and relevant recent developments. A written thesis paper was produced that includes the researcher's conclusions and selected quotes from interviews and artifact texts. Whole transcripts, audio recordings and text artifacts were not made public because that could compromise the confidentiality of participants.

## 7. RESULTS

Eleven U.S. working environmental journalists who cover climate change participated in this study. Some basic information about the subjects appears below in *Fig. 3, Demographic Information*.

## **Demographic Information**

*Fig. 3*

**Sample size  $N = 11$**

### **Publication type**

- Print newspaper + website = 7
- Wire service = 2
- Online only = 2

### **Region**

- Northeast = 5
- Southeast = 2
- Midwest = 3
- Southwest = 0
- West = 1

### **Reporter gender**

- Male = 9
- Female = 2

### **Reporter age**

- Median age = 48

### **Reporter experience level**

- Median years in journalism = 29
- Median years primarily covering environmental issues = 15
- Median years covering climate change = 12

### **Reporter educational level**

- Bachelor's degree = 11 (8 in journalism, 2 in journalism + science, 1 in English, 1 in biology)
- Advanced degree = 4 master's (2 in journalism, 2 in science)
- Science degree at any level = 3 (1 bachelor's only, 2 bachelor's + master's)

### **Professional memberships**

- Society of Environmental Journalists = 11
- Investigative Reporters and Editors = 3
- National Association of Science Writers = 2
- Others = 1 or less

The subjects' demographics show that they are even more experienced than the typical environmental journalist, who in turn is more experienced than the typical newsroom journalist. The Sachsman (2006) study of environmental journalists in four U.S. regions found that their median age ranged from 39 to 45, their median years in journalism ranged from 12 to 15, and their median years covering the environment ranged from 5 to 9. The subjects in this study had a median age of 48. The median years in journalism was 29, and the median years covering the environmental beat was 15. Since the study design required subjects to have at least five years of experience covering climate change, participants also had intimate knowledge of the subject matter. This tremendous level of experience, and the fact that most subjects have journalism degrees, also suggests these reporters are well-steeped in traditional journalism values.

The study fell short of reflecting the U.S. population of environmental reporters in gender and region. The Sachsman (2006) study found that about 30 percent of environmental reporters are female, similar to the percentage of all U.S. reporters. In this study, only 2 out of 11 subjects (18 percent) were female. The study subjects were concentrated in the eastern part of the United States, with only 1 from the West and no one from the Southwest. These demographics could be expanded in a future study (see p. 88). Since there is no research identifying the population targeted here – environmental news reporters for print or online mainstream publications with at least five years' experience covering climate

change – there is no way to know how well the study subjects fit the demographics of that subset of environmental journalists.

These veteran reporters tended to agree on many issues, but there were some important differences as well. For example, five of 11 said global warming should be stated as a fact; the rest said it should be attributed to a source. Please see *Fig. 4, Summary of Answers to Objectivity Questions*, for a chart summarizing key results.

The research interview consisted of four main sections. First, subjects were asked to describe what major trends they had observed in climate change coverage in the past decade. Second, subjects were led through a series of questions related to nine components of objectivity, such as balance and fairness. Third, subjects were asked for their thoughts on transparency in journalism. Fourth, subjects were asked to discuss objectivity itself.

## **7a. Trends Journalists Saw in Climate Change Coverage**

When asked to discuss major changes they perceived in climate change coverage, subjects often referred to three trends. Please see *Appendix IV, Climate change: The science and politics of global warming*, for background information on major developments in climate science and politics from 1750 to 2010.

### **i. From Controversy to Consensus, Mostly**



In every case, reporters cited the end of “he said, she said”-type story construction as one of the most important changes in coverage of global warming in the past decade. The journalists said that in the late 1990s through the early 2000s, many climate change stories were mired in controversy. Although mainstream scientists had been concerned about mounting evidence of global warming for more than a decade, a public relations campaign partly funded by the fossil fuel industry (e.g., Gelbspan, 2005, Oreskes, 2010) had succeeded in casting doubt upon the evidence.

“I think earlier on, the skeptical voices had more input in the stories that I read – and the ones I wrote as well,” one journalist said.

Looking back, journalists lamented the coverage typical of that era as displaying “false balance,” “faux balance,” or a “he said, she said ping-pong match.”

One journalist said climate change was covered like a political campaign, with relatively equal attention and space given to both “sides.” Journalists acted this way out of a habitual dedication to balance. “All the mistakes I see political reporters make, I saw reporters make with climate change, in pathetic fashion,” the journalist said. “A lot of the nuance and the uncertainty and the fine level of detail that a good science or environmental reporter would find was lost in the very simplistic ‘he said, she said’ construction.”

Reporters also encountered intense pressure within the newsroom about their coverage – pressure that still exists, to some extent, today. Some editors were

reluctant to allow climate change stories because of the seeming uncertainty and controversy, and when they did, they required the addition of disclaimers or the use of “skeptic” sources.

“Editors have difficulty doing shades of gray,” one reporter said. “You can have a reporter who’s gone through a lot of training and talked to a lot of people and read the studies, and unless you’ve got the right editors, that experience is essentially going to be wasted.”

Another journalist saw his allegiances questioned. “When I started here in [the early 1990s], it seemed like if you were going to bring up climate change in a story, you almost sensed you might as well put a sign around your neck saying you were a member of Greenpeace,” he said.

When and why did things begin to change? Several journalists cited as a turning point the 2001 IPCC report that cited “new and stronger evidence” that mankind was altering the climate. “I don’t think a lot of editors started getting over their anxiety about the story until the IPCC report came out,” one said.

The ongoing evolution of science was an important factor. The most recent IPCC report, released in 2007, ramped up its confidence level by saying anthropomorphic climate change was “very likely,” adding to the growing body of evidence of scientific research. Scientific societies in the U.S. and abroad, such as the National Academies of Science, published statements supporting evidence of climate change. Federal and state agencies also went on the record in support.

“The message was finally getting through that this is what mainstream scientists say,” one reporter said.

Gradually fading was the typical story of the late 1990s, which had readers bouncing back and forth between people who said anthropomorphic climate change was happening, and others who said that wasn’t the case. “Now you just don’t see that,” one journalist said. “The science is so clear, the skeptics are so few and in many ways discredited.”

“Reporters tend to reflect where the mainstream is,” another journalist observed. “That’s typically what the *mainstream* media is.”

Several journalists also mentioned that scientists became more decisive in their comments, making journalists feel more comfortable. “There are scientists I know who speak very definitively about climate change now, who were very timid at first. They would say there are still a lot of things we need to study. ... They would always qualify things,” one reporter said. “Now they speak with much more authority. I think that’s what gotten journalists to write with more authority.”

Summing it up, one journalist said, “I think it’s been a real metamorphosis in the newsroom and in wire coverage. It’s gone more from coverage being theory, to coverage being scientific consensus,” he said. “It’s been definite, yet I’d still argue it’s probably been way too conservative, trying to leave the open possibility” that things could change yet again.

Another reporter said media coverage “quite rightly has changed from describing somewhat tenuous scientific conclusions to describing a near consensus

about the broad outline of climate change.” The reporter used the term “near consensus” because he said “consensus means ‘everybody agrees’ if you look it up in the dictionary.” (Most dictionaries define the term more generously as “general agreement” or “solidarity,” although sometimes mentioning “unanimity” or unanimous agreement (e.g., Merriam Webster, 2010).) Regardless, the journalist said, “there are still a lot of questions on how this will play out.”

## **ii. From Science to Policy and Politics**

Second, journalists see the science “debate” as settled and have now moved to the policy and political debates.

“With climate change, there are two main parts. You have science, and then you have policy: What do you do about it?” one reporter said. “Personally, I think it’s one thing to say climate change is real, but as a policy point of view, we decide not to do anything about it. Or we decide it’s too expensive, too difficult, or the benefits outweigh the costs. To say climate change is not happening – that’s a science issue and that’s not true.”

Another journalist had similar sentiments. “The science is fairly clear,” she said. “You really can’t debate that man is contributing to climate change; you can debate exactly how much and what to do about it.”

The climate change story has become intensely political lately. The U.S. Supreme Court ruled in 2007 that the Environmental Protection Agency could

regulate carbon dioxide and other greenhouse gases. In 2009, the EPA found those gases to be harmful to public health, opening the door for a suite of new regulations. In 2010, the U.S. Congress debated and then abandoned climate change legislation. President Obama has vowed to push forward with regulations despite midterm electoral pressure to back down.

“Politically, it’s gotten a lot more serious,” said one reporter who covers environmental politics. And politics is the meat-and-potatoes of journalism.

Recently, opponents of climate change regulations and scientific “skeptics” have found traction in the soft mud of a sinking economy. Among supporters of the burgeoning Tea Party movement, only 14 percent said global warming is having an effect now, while 49 percent of the rest of the public believes that it is, according to a *New York Times/CBS News* Poll (Broder, 2010). The poll also found that more than half of Tea Party supporters said that global warming would have no serious effect at any time in the future, while only 15 percent of other Americans share that view. About 8 percent of Tea Party respondents also volunteered that they did not believe global warming exists at all, while only 1 percent of other respondents said so.

Journalists who follow climate change must note these developments, if politics or policy is any part of their beat. If people in the public eye voice doubts about the science of climate change, the media cannot ignore those comments. “With the recession in the U.S., there’s been a lot more stories about questioning the science,” a journalist said.

### iii. From Global to Local

Another change several journalists cited was a shift from seeing climate change as a far-off, theoretical, worldwide phenomenon best left to international experts, to one that could be seen imminently from readers' back yards.

"Because it's a global issue, always having been a local reporter, it was a little difficult to write authoritatively on climate change because it was so damn big," one journalist said.

Key to changing this perspective, journalists said, was education. Some attended fellowships that let them visit Alaska or the Arctic with scientists to see research and impacts first-hand. Others applied armchair edification, soaking up books and resource guides on the topic. Journalists discussed the topic at conferences.

"I didn't have a science background myself coming into this," one journalist said. "I remember getting the Bud Ward book on covering climate science [*Reporting on Climate Change: Understanding the Science*, 2000] around 2001 or '02. I remember feeling cautiously confident enough to believe the science was real."

In addition, reporters started looking for local angles and connections to the story. Even when there was no major research university in the community, reporters found stories about local businesses or bird-watchers dealing with climate change.

## **7b. Dimensions of “Objectivity”**

Following the general discussion about changes in climate change coverage, the bulk of the research interview consisted of talking about journalism ethics and how reporters thought the story should be approached. The author identified nine dimensions of traditional objectivity based on the literature review and crafted questions to address each one (see Chapter 4c, *Deconstructing Objectivity*, for a detailed discussion of each of these dimensions). The following section covers these nine areas.

### **i. Quoting Authoritative Sources**

As mentioned earlier, one of the ways in which journalists attempt to be objective is to build their stories on outside sources, rather than their own opinions. Journalists generally look for sources that can provide an authoritative account of events.

In the case of climate change coverage, who can be deemed a legitimate, authoritative source? The author asked subjects whether “skeptics” still fit the bill.

Journalists in this study generally said “skeptics” had no place in climate science stories any more. They might, however, be quoted in policy stories.

“I don’t use the skeptics at all,” one reporter said. “I’m not going to write a story saying, ‘Is climate change real? Some say yes and some say no.’”

Many journalists moved away from “skeptics” as these sources became discredited, in their minds, by connections to fossil fuel interests and industry PR campaigns, and by their shifting positions. “The people who were pushing the skeptic point of view, I realized what their motivating factors were. I read many of the stories about the tobacco connection” (e.g., Oreskes, 2010), another journalist said.

One reporter gave an example of the shift away from using “skeptics” as sources. In 1998, he had an editor insist on adding a quote from a “skeptic,” along with “the obligatory paragraph” explaining their dissenting views, to a story. Three years later, in 2001, the reporter reflexively put in a call to a “skeptic” and added those comments to the story along with a disclaimer saying that such “skeptics” were in the overwhelming minority of scientists. A different editor removed the quote and the disclaimer, saying they were no longer needed.

Many news organizations had some version of this standard disclaimer paragraph, stating that the majority of peer-reviewed scientists found evidence of climate change, but a few did not. Similar statements are still in circulation today, depending on the story.

For the sake of fairness, however, opponents cannot be ignored, even if they are in the minority, the journalists said. Besides scientific “skeptics,” reporters must deal with politicians, activists and members of the general public who don’t agree with the consensus view.



“If they are elected officials – governors, congresspeople – you certainly are bound to quote them,” one reporter said. “You should also point out what the science says.”

But in general, “there’s no reason to go and find a denier just to have that denier, to have some sort of balance, because you’re talking about scientific facts,” another reporter said.

One reporter compared the situation to writing about evolution, another politically sensitive topic. “If I write a science story about evolution, I don’t feel bound to call up a creationist,” he said. “I think the reporting on global warming hasn’t quite gotten to that stage yet. It’s getting close.”

A skeptic might still qualify as a source if the person was actually a scientist doing active research and proposing testable hypotheses. “That makes them legitimate in my book because they’re actively working on the problem,” one reporter said.

Activists for any cause – whether representing industry or the environmental movement – are to be approached with caution. Several reporters said they stopped quoting NASA scientist Hansen, the “godfather of climate change” science, after he became an outspoken critic of burning coal and was arrested several times while protesting.

When asked who would make authoritative sources, journalists answered: scientists currently publishing in peer-reviewed journals, preferably with the government or universities.

Scientific knowledge in a particular area is also essential. “I try to find the person with the closest expertise. I don’t want to talk about atmospheric science with an oceanographer,” one journalist said.

Several journalists said climate change sources must be especially thoroughly vetted. Resources such as SourceWatch.org help identify which sources might have questionable ties, such past work for the oil industry. “You have to ask them who they’re funded by,” a reporter said. “The perception of prejudice or perception of conflict of interest is a very dangerous one. I have to avoid it at all costs.”

Others said reporters have to apply the same rules to climate sources as anyone else. “You take the time to weigh the evidence and figure out who’s worth talking to, and you weigh people’s interest. I don’t think it’s different than any other story,” one said.

Another pointed out the challenge of trying to find sources who are not only authoritative but disinterested. “It’s hard, if not impossible, to find the perfect, lily white, pure disinterested source,” he said.

## **ii. Balance**

Balance, one of the earliest components of objectivity, remains important in modern journalism textbooks that tell journalists to get all sides of the story.

Subjects were asked if journalists should still attempt to write “balanced”

stories on climate change. Every reporter but one said yes, balance is still important, but that they have redefined what makes for a balanced story when covering the science of global warming.

Reporters described an evolution in their thinking on the issue in the past five to 10 years. Balance used to mean representing two sides of the climate story with a near 50/50 division. “Back then, it was saying, ‘I’m a balanced reporter ... I have to get both sides,’” one journalist said.

This approach led to the “balance as bias” problem described by Boykoff (2004, 2005, 2007) – a term specifically mentioned by one seasoned journalist. “By giving both sides – which is what you do in political reporting – that connotes the two sides are equal,” he said. “Whereas, in science, one, the two sides are not equal, and two, it gives the impression that science is split when it wasn’t.”

Another reporter lamented that journalism is often about “reporting one or the other extreme and assuming the reader will see the truth in the middle.” This doesn’t work with global warming, he said. “You can still report the contrarian’s point of view, but you need to establish it’s not only a minority, but a very small minority,” perhaps 2 to 3 percent.

“A balanced story on climate science doesn’t look like a balanced story you’ve been taught in Journalism 101,” another said. “If you’re covering a city council meeting on a traffic light, or what have you, and there’s two sides to that story, that’s one thing. But if you’re writing that the overwhelming amount of evidence is in one direction, it’s different.”

Today, savvy environmental journalists must write science stories that reflect “the preponderance of evidence” or “the weight of evidence,” or “the direction science takes you,” the subjects said.

Novice reporters, or those who are unfamiliar with science reporting, might mistakenly apply the old rule. “If you don’t have the understanding, you’ll cover the superficial to some degree,” a journalist said.

Reporters might have to stand up for themselves within the newsroom to do so. “I suppose at some point you tell your editor this is a science story, not a political story,” another said.

Of course, if the story is actually about politics or policy decisions, the old rule still applies. “In a political story, you want to represent the different sides, the different political stakeholders,” one said. Another said because he works in a coal-dependent state, he often has to report on the coal industry and its positions relative to global warming.

One journalist said her knowledge and views of journalism have evolved since her 20s, when she was doing the “he said, she said” thing. “As journalists, the balance issue is important early on when you’re learning the subject, but after a while, it’s your duty to explain as close to the truth as you can get,” she said.

One journalist rejected the need for explicit balance, while maintaining the need to keep an open mind about opposing evidence. “If you covered a story on an avalanche, and people were buried under it, you wouldn’t feel the need to balance it by quoting someone saying it didn’t happen,” he said. “To provide a counterpoint,

even if the counterpoint is wrong – that’s not balanced, it’s misleading.”

### **iii. Facticity**

Relying on “facts” helps journalists build an “objective” story. Facts generally must be attributed to sources unless they are incontrovertible.

In this study, subjects were asked two questions about facts: whether reporting should “just stick to the facts,” and just whether anthropomorphic global warming is now a “fact” that no longer needs attribution.

Reporters displayed a nuanced understanding of “facts.” They expressed disdain for journalists who were merely “stenographers,” transmitting what someone said with no regard for its veracity. Reporters said they would not knowingly let a source make a false statement in a story without providing some rebuttal. “My job is to fact-check the president,” one said.

One reporter explained her viewpoint is different now than when she covered politics and would simply report on conflicting sides in a hearing. Now she adds outside perspective. “Not just the who, what, when, where,” she said, “but the why, the motives, the context.”

Another said: “That’s the nature of journalism – you want to uncover layers of bullshit and get to the truth.”

As to whether the existence of anthropomorphic global warming can be stated as a fact, journalists were divided, with 5 of 11 saying it should be treated as a

freestanding fact, and the rest saying it should be attributed to a source.

“Yes. It can be plainly stated as a fact. It’s just a reality,” one said.

“I state it as a fact,” said another. He only attributes the statement if it relates to some predicted impact.

Another journalist said he has discarded the traditional disclaimer saying that most scientists have found evidence of global warming. And he won’t write that carbon dioxide is “linked to” warming. “No, it *causes* warming,” he said emphatically.

But a different reporter said he still refers to greenhouse gases as “being blamed” for global warming rather than flatly stating the gases “cause” it. When asked why, the reporter said: “I don’t know, maybe it’s because I’m not a scientist myself. ... It’s still is a hugely complicated, complex subject, and I suppose in some ways it’s leaving some small amount of room for the possibility maybe they have it all wrong, however remote that is.”

Several journalists who supported attribution referred to traditional journalism values. “Attribution is still an important part of journalism,” one said. “It’s, ‘Show me, where’d you get the goods?’”

Another person said because a significant portion of the population doesn’t believe in global warming, it’s important to maintain credibility with readers by attributing statements to scientists. “I wouldn’t necessarily say I have to attach attribution to every single story I produce,” he said, “but I do in quite a few, to remind people this is something scientists have studied, and not something politicians pull out of thin air.”

Another journalist said that, even though he is becoming increasingly comfortable with saying there is evidence of global warming now, he still attributes it to scientists. “This may sound goofy, but I’m not the expert. The minute I think of myself as an expert, I’m committing a journalistic no-no,” he said. “My expertise, such as it is, is in journalism, not in atmospheric science.”

Journalists who viewed global warming as a journalistic “fact” were asked when it became OK to state it as such. “Somewhere in early 2000s – maybe 10 to 15 years after scientists,” one journalist said. “Which is good. Let the science community get there first,” he said.

#### **iv. Impartiality**

Impartiality means being free from affiliation with any particular group or political party or conflicts of interest.

When asked whether journalists covering climate change should be impartial, all subjects in the study said yes.

“It’s always important for journalists to approach issues with an open mind and to challenge their own biases and not show favoritism to one side or the other,” one reporter said. “When you approach any story, you have to evaluate all sources with a critical eye.”

Another journalist said she defines impartiality as applying her knowledge base equally to every source on her beat – whether it’s General Electric, BP, the

Sierra Club or NRDC. “Some days I want to piss everybody off equally. Then I’m doing my job,” she said. “Nobody gets a free pass.”

Several journalists said being convinced by the evidence that global warming is happening is not the same as being biased about it. “I think that’s education,” one said.

Even so, it’s important for journalists to investigate claims from critics. “I still read some of the denialists’ stuff,” one said. “It’s a way of asking myself: ‘Are you still impartial like a scientist is?’”

One person said he had read an article online saying the time for impartiality in journalism had passed. He disagreed with that idea. “I think it’s very important,” he said. “Maybe I’m old-school in that regard.”

## **v. Neutrality**

Neutrality means being disinterested in or detached from the news.

In this study, journalists were asked whether journalists should be neutral on the issue of climate change, as if they have no preference what the outcome is.

All subjects said yes, journalists should be neutral in terms of policy decisions or political outcomes – whether to support a particular piece of cap-and-trade legislation, for example.

But they disputed the idea that they should not care about the environment in general.



“I think journalists would not be human if they didn’t have a concern about the fate of the planet,” one said. “Political reporters, it’s OK for them to embrace democracy. It seems to be OK for business reporters to embrace capitalism. It seems to me that it should be OK for a reporter who covers the environment to want to live in a clean and healthy environment.”

Another said he avoids donating to environmental causes, does not sign petitions, registers to vote as an independent, and won’t post anything to his Facebook page that could be construed as biased. However, considers it his right to want a good environment for his children to grow up in. “I do not cede my right as a parent or a human being just because I’m a reporter,” he said.

Another added: “I don’t think anybody can cover the climate change issue and not have a personal view of it. The question is, whether that personal view clouds your ability to cover or consider, again, alternative testable ideas that may be challenging, or seem to challenge, the mainstream thinking.”

One compared covering the environment to covering education, a beat she previously held. “Once you accept the basic truth that education is a good thing, you don’t sit around writing stories about how we shouldn’t invest in schools,” she said. “I could still be neutral writing about schools, but most stories rested on the foundation that education was a good thing to have.”

## **vi. Avoiding Opinion in Newswriting**

Keeping journalists' personal opinions out of news stories has been seen as an essential aspect of objectivity.

Subjects in this study were asked two questions related to this topic: Should reporters keep their own opinions out of stories on climate change, and should journalists ever be advocates for the environment?

Most reporters acknowledged that they had opinions on the subject of climate change, but all said they kept those opinions to themselves when writing news stories.

"I don't think you should put your opinion in there," one said. "It should be asking good questions, marshaling good facts and letting readers draw their own conclusions. That's how it's always been. Journalists are in the fact business."

Another compared environmental writing to sports writing, where sports reporters are not supposed to cheer in the press box. "I try to maintain my reputation as a credible, objective journalist, which I feel I absolutely am," he said. "You have opinions on any subject you're covering, but you do your best to leave those at the door."

One quipped that he barely had any opinions any more. "After decades of journalism, I've all but suppressed or driven aside my personal feelings," he said.

Another reporter said he had to dismiss his own feelings about climate change to avoid an overwhelming sense of doom. "If I let the science freak me out, I probably never would get to sleep at night," he said. "It's the only way to stay sane."

Others pointed out that the very act of choosing to do a certain story or

interview a certain source is a subjective decision. “I think you show your commitment by the stories you cover, not by the opinions you express in your story,” one said. “The best way to show your commitment is to write about it, in an intelligent way, in a fair way, and when the situation calls for it, in a balanced way.”

Subjects described their reporting today as being more interpretive and analytical. One said he wanted to be a “curator” of information because his readers don’t have time to sift through original research like he does.

Several used the term “writing with authority” to describe what they do now. “I think generally journalism is changing,” one said. “We’re not writing opinion, but we’re writing with more of a voice, and using our expertise to make these calls.”

Another added: “There’s a big difference between opinion journalism and writing with authority. Opinion journalism can be incredibly lazy; anybody can say it. Writing with authority means you’ve actually studied your subjects, read the records, studied the reports. You know what you’re talking about.”

Reporters who wrote blog items or columns, in addition to their “straight” news stories for the regular publication, said those pieces tended to use a slightly different tone.

“Some of my opinions or ideas may leak out or sneak out” in the blog, one said. Another added: “I guess with a blog post, what I try to do is dance right up to the line that separates fact from opinion and not go over it.”

Another said his columns are more like news analysis. “Any good column should have a point of view, but that doesn’t mean you’re writing an editorial. You

can lead readers down a certain path. Make sure it's a salient point you're trying to make," he said, but "have it come through somebody else's voice."

As to whether journalists should be advocates for the environment, nine out of 11 said no – never.

One complained that journalists who do advocacy – mostly freelance writers, in her experience – give mainstream environmental journalists a bad name.

"The only way you can be an advocate is to write honest stories about the problem," said another journalist.

One reporter said that journalists should simply put a spotlight on or hold a mirror up to whatever reality people need to see. "You can certainly tell them some of the solutions the experts are saying, but ultimately, you're the messenger. You're not the policy maker," he said.

The two who disagreed that journalists should always avoid advocacy said climate change was such a serious challenge that it merited a slightly different approach.

"I think it's OK to advocate for saving the planet, I do," one said. But he added, "My approach is to say climate change is happening and let people know what's going on, rather than to personally advocate for it."

Another said he had given a lot of thought to whether climate change was the moral issue of our time, like the civil rights movement was in the 1960s. "This does affect people all over the world – the poor mostly – mass migrations, lack of water. The U.S. and industrialized nations are causing it," he said. "There comes a time

when you say this is right or wrong. Even though you're an objective reporter, you're still pursuing the story ... to show people it's right or wrong."

As he continued talking, he mused, if he believed this, should he quit his job and become an evangelist for climate change? Or, he said, "should I use my training and write stories that tell people the truth?" He decided that he could cover climate change with the same zeal as the county government reporter who exposes corrupt politicians. "It's really no different" than regular news reporting, he said, "it's just an acceleration."

## **vii. Fairness**

Fairness means being unbiased, honest and just.

Subjects in this study were asked how journalists should attempt to be fair when doing climate change stories. All agreed fairness was important.

Several journalists said being fair means accurately representing the viewpoints of various sources: Sources would agree with the characterization of their position in the story. Quotes are not taken out of context.

Others defined being fair as being open-minded. "It's not as black and white as it seems," one said. "It's not as black and white as Democrats are for it and Republicans against. It's not black and white as to what we should do about it."

Another said being fair means admitting "what you don't know and what the scientists don't know" – not overstating the story and not glossing over

uncertainties, although editors will usually push to do so.

Several journalists said being fair means listening to critics and “skeptics.” “You still have to hear the naysayers and denialists – you still have to keep reading that stuff,” one said. “Essentially it’s adopting the attitude of a scientist, which is to say, ‘I’ll keep looking at this, I’ll keep testing this.’”

One reporter said she strives for “being fair to the public ... they trust me to bring them the truth as close as I can get it.”

Several journalists noted that the idea of being fair can be complicated. For example, right-leaning Fox News promotes itself as “fair and balanced,” but liberals don’t think so. One reporter noted, “Fair is in the eye of the beholder.” Another said, “It’s not so simple. It’s an issue when there are times I just want to stop writing about it because I’m so exhausted by it.” However, he said he would carry on covering climate change because it’s a fascinating subject.

One reporter noted that, given recent public opinion polls, many readers won’t buy into a story that asserts anthropomorphic climate change is happening. Although he downplays the skeptical perspective, “I do wonder in my own mind if this is backfiring,” he said.

### **viii. Straight News Writing**

The inverted pyramid style of writing – putting the most important facts first, followed by less important ones – has been recognized as an early hallmark of

objective writing.

Journalists in this study were asked whether a straight-news, inverted pyramid story was any fairer than a feature story. All subjects responded no, that either form could be fair or unfair, depending on how it was written.

While a feature story might try to show more “heart,” “passion” or “emotion,” there are many ways to tell a story, and one was not inherently fairer than the other, the reporters said.

“You’re still making judgments” as a writer, one said. “You’re still stacking paragraphs that give preferences to one voice over another voice,” another said.

All of the journalists had written climate change stories using a feature approach – focusing on a scientist in the field, for example. They felt these feature stories were more interesting to readers and more amenable to explaining things in detail. In addition, good reporters leave their desks and get out in the field, a practice which lends itself to feature writing because the details observed can be used in a story, some noted. Straight-news stories are still used where journalists deem them appropriate or necessary, such as for breaking news.

## **ix. Addressing Criticism**

Journalists in this study were asked how they dealt with complaints about global warming stories in an effort to see whether they invoked standards of objectivity as a defense.

Their responses indicated that journalists use a range of responses to criticism, depending on the situation. Of the reporters interviewed, eight described responses that correlated with traditional objectivity (ignoring critics or pointing to traditional “objective” practices), and three described more often engaging in non-traditional responses involving extensive conversations with the audience.

Responses also indicated that reporters covering climate change receive an extreme amount of criticism – occasionally from sources and editors, but most often, from people who don’t believe in global warming.

Several journalists said they are the target of “hate mail,” “hate blogs,” parody images, “whole websites attacking me,” conspiracy theories, angry phone calls, nasty online comments and more. One journalist said he contacted security about one caller who was nearly threatening his life.

Another journalist said he gets more negative comments about climate change stories than anything else. “If I have a climate change story, the phone is ringing every few minutes. I know it’s going to be one of those days,” he said.

Several reporters tried educating critics about the science, typically with little success. One offered people booklets from the National Academies of Science. Another reporter worked up a standard e-mail response in which he linked to sources such as the NAS, the EPA and the IPCC. “I took it upon myself to be a teacher,” he said. But then “I found out it was a waste of time and energy, and you cannot explain to a closed mind.”

Other times, reporters tried to explain to critics how the press works. One



journalist said, “I tell them my coverage reflects the mainstream consensus, then I try to articulate why that’s the case.” Another said, “I say I’m just a reporter, I’m not an expert, not a scientist.”

One journalist said climate change deniers told him he was biased because he didn’t follow the old journalism rule of quoting one side and then the other. He spent more than an hour on the phone with one such man, telling him the old “balanced” approach was no longer appropriate.

Journalists said they were frustrated by the public response to their stories, to the point that some gave up engaging with the audience. One reporter felt she had failed to be an effective journalist. “No matter how much I wrote about it, or how fairly, it wasn’t informing people,” she said. “There were people who didn’t want to be informed.”

Another reporter pointed out that those who cover climate change must be willing to take a lot of “personal abuse.” This hardship has scared some reporters and editors away from the story, which he described as an effective part of the opponents’ campaign.

Some journalists said it’s not worth responding to ideologues. “You try to be polite and hear people out,” one said, but “if they’re convinced this is a hoax brought on by Al Gore, you’re not going to get anywhere.”

Other journalists mentioned criticism can come from all sides – not just from the deniers, but from the environmentalists and scientists. “People always accuse me of being biased,” one said. “Both sides in fact.” She tells them she works hard to

be fair.

### **7c. Transparency**

The next section of the interview focused on transparency, the relatively new argument that journalists should be open and honest about themselves and the process of newsmaking.

Journalists in this study were asked whether they thought transparency is a good idea. Of 11 respondents, only one said she would support full-blown transparency on any topic, one said he was “agnostic” about it, and the other nine said they would support varying degrees of disclosure that did not include revealing the reporter’s personal opinions.

Most subjects said news reporters still need to keep their opinions to themselves. “I don’t think it’s lacking transparency to keep your feelings and thoughts and opinions to yourself,” one said. “I think it’s being professional.”

Another said he would not want to say, for example, how he voted. “I think a professional journalist knows how to detach their own personal agendas to some extent” and be fair to those involved, he said.

The reporter’s opinion does not matter at all, one said. “Our job is to be a mirror,” he said. “It doesn’t matter if I’m holding up a mirror with my left hand or my right hand or my fingers or my toes.”

Others added that journalists should be “advocates for the truth” and that a

journalist's writing should "speak for itself." One took pride in writing stories in such a way that people wouldn't be able to figure out what his personal opinion was.

Reporters differentiated sharing personal opinions from showing readers where they got their facts. By "providing enough information on your original sources, if they want to look at it themselves, or reassure themselves you're giving them the straight story, they can go to the original thing and read it," one said. "Of course, most people won't."

One defined transparency as delineating the reporter's expertise and the accumulation of data on a subject. "If I'm going to write with authority, the reader needs to know how I have that authority," he said.

One journalist mentioned transparency in funding. His non-profit publication discloses its grant providers, some of whom are pro-environmental groups. "The bottom line is, I still write the same stories," he said.

Most mainstream news publications prohibit their news reporters from publicly stating their personal opinions on subjects they cover. But one reporter who was undecided about transparency said he would be OK with sharing his personal opinions, if his publication required it. "I'm not embarrassed by my views," he said.

The journalist who favored the concept of transparency said that journalists should be completely open if they expected others to behave that way. Journalists should not hold themselves above others. "It's a two way street," she said.

#### **7d. Support for a New Form of Objectivity**

In the final part of the research interview, the author asked subjects to reflect directly on the subject they had been dancing around for nearly an hour: objectivity. This part of the interview consisted of three main questions: Should journalists try to be objective in their coverage of climate change? How do you define objectivity? And, what is the future of objectivity in journalism?

Of 11 reporters interviewed, eight said journalists should still be objective, but their definition of objectivity no longer meant “opinion-free.” Instead, the journalists typically referred to “writing with authority,” or interpreting their research based on extensive experience and analysis.

The remaining three said objectivity was impossible and/or pursuing it led to the false balance problems described above.

In the main, these veteran reporters still regarded objectivity – as they now defined it – to be essential. Several said objectivity is “a lofty goal,” the “cornerstone of real journalism,” and a value held dear by newspapers. Proponents of objectivity said it is more important now than ever, to provide an alternative to “screaming cable TV,” biased bloggers and the general fragmentation of viewpoints in the media and online. “Credibility is one of the few things newspapers still have going for them,” one said. “At least you know they’re trying to be objective. There’s some effort by a professional to weigh different sides and try to come to an independent conclusion about what’s going on in the world,” another said.

They acknowledged “everyone’s biased” and no one “can be perfectly objective,” but said objectivity is the journalist’s way of making the best of the human condition. “It’s not the absence of opinion,” one said. “It comes out of seeking many opinions.” Objectivity means considering “the rainbow of biases and opinions out there” or “looking at things through different prisms and different points of view.”

When asked to define objectivity, several reporters were stumped. “It’s like pornography,” one said. “I know it when I see it.” Another, after rambling for a while, laughed and said he was still trying to figure out what objectivity was after 30-plus years on the job.

When asked to define objectivity, the most common words reporters used were “fair,” “accurate” and “open-minded.” Other responses were:

- Accurately presenting viewpoints and information
- Being aware of the reporter’s own biases and trying to see other perspectives
- Looking at the other side, “if there are legitimate other sides”
- Not predetermining the story
- Trusting the research
- Acknowledging the reporter’s level of ignorance when necessary. Asking questions, picking up the phone.
- Gathering as many facts as possible
- Not protecting anyone’s job
- Being independent
- Representing your readers and/or the public

One reporter who had covered international climate change conferences abroad found it fascinating to observe foreign journalists who have no qualms about exposing their personal views. He recognized that the American form of objectivity

is unique. “British journalists have such opinions and they don’t hide them at all. There was booing from different reporters. That’s an eye-opening experience for U.S. journalists,” he said.

He said he still preferred the American way, which he saw as healthy and informative. “There’s something to be said for opinion journalism,” he said. “But I know the American style of journalism and have no plans to switch over to the *London Independent*.”

When asked if objectivity would be an important value in the future, most of the journalists interviewed said they hoped their brand of journalism would survive. Some said there would “always be a market,” perhaps a “smaller share” of the larger media market, for people who want independent reporting.

One said she hoped this was not Pollyannaish. “I think people value good journalism,” she said. “I don’t know whether people will pay for good journalism.” Another said objective journalism is “how journalism is going to survive.” A third hoped for a return to the discovery of the penny press era that “objective” journalism was a more marketable product.

Those who disagreed with the idea that journalists should be objective took issue with the traditional definition of the term. All three said true objectivity was “impossible” or “unachievable.” They also pointed to problems arising from the traditional pursuit of objectivity in journalism.

“Sometimes it’s almost like people use this idea of so-called objectivity as a cloak for lying. ‘Print my lies, otherwise you’re not objective.’ Well, that doesn’t

serve anybody, except the person who's lying," one said.

Another said: "If you try to remain objective in covering [climate change], you end up quoting a skeptic at the same length you quote someone else. You're not doing your readers any favors that way."

A third said objectivity "implies a cold detachment," and that "journalism is not a license to shed yourself of your humanity."

The reporter who was most opposed to traditional "objective" journalism said he thought the standard was dying. "The idea that, no matter what you're covering, no matter how ridiculous, you have to present that on equal footing – I think that idea is going out," he said.

## **8. Conclusion**

### **8a. Discussion**

This study investigated how experienced environmental reporters understand the concept of objectivity, and how they apply that to covering climate change. In-depth interviews with 11 journalists working for newspapers or online publications revealed something of a paradox: Most of these journalists still profess belief in objectivity even as they reject or redefine it.

More specifically, these veteran reporters, by and large, find great comfort and pride in upholding the revered traditions of newspapers, the oldest branch of the major media. However, they have adapted those traditions to the pressures and needs of the modern workplace, and as a result, frequently find themselves trying to claim a comfortable space on the subjectivity/objectivity continuum. All subjects in this study have revised their views on objectivity during the past five to 10 years, the period of interest to this research.

A summary of interview results on questions related to objectivity is presented below. Please see *Fig. 4, Summary of Answers to Objectivity Questions*.

The first column describes the aspect of objectivity that provided the basis for the interview question. The second column describes the traditional objective view of the topic. The third column represents a new view, if one emerged during the study. Subjects' current views of the topic were categorized as traditional or



new. Some answers were categorized as outliers. The number of subjects whose answers fell into each category is represented by the number in parentheses.

This analysis shows that, at least among this group of journalists, some elements of traditional objectivity retain strong support and others have been abandoned or modified completely.

The following traditional elements had complete support:

- News stories should rely on facts
- Need for impartiality
- Need for journalists to be neutral on policy issues
- Need to keep reporters' opinions out of news stories
- Need for fairness

Subjects abandoned the traditional view on the following items:

- Acceptable to use "skeptics" as sources on science stories
- Traditional view of balance as two sides given equal weight
- Need for straight news writing
- Traditional definition of objectivity

The following elements had mixed support:

- Global warming may be stated as a fact
- Journalists should never be advocates for the environment
- Address criticism by pointing to "objective" practices
- Objectivity is still a goal
- Full transparency is a goal

## Summary of Answers to Objectivity Questions

**Fig. 4**

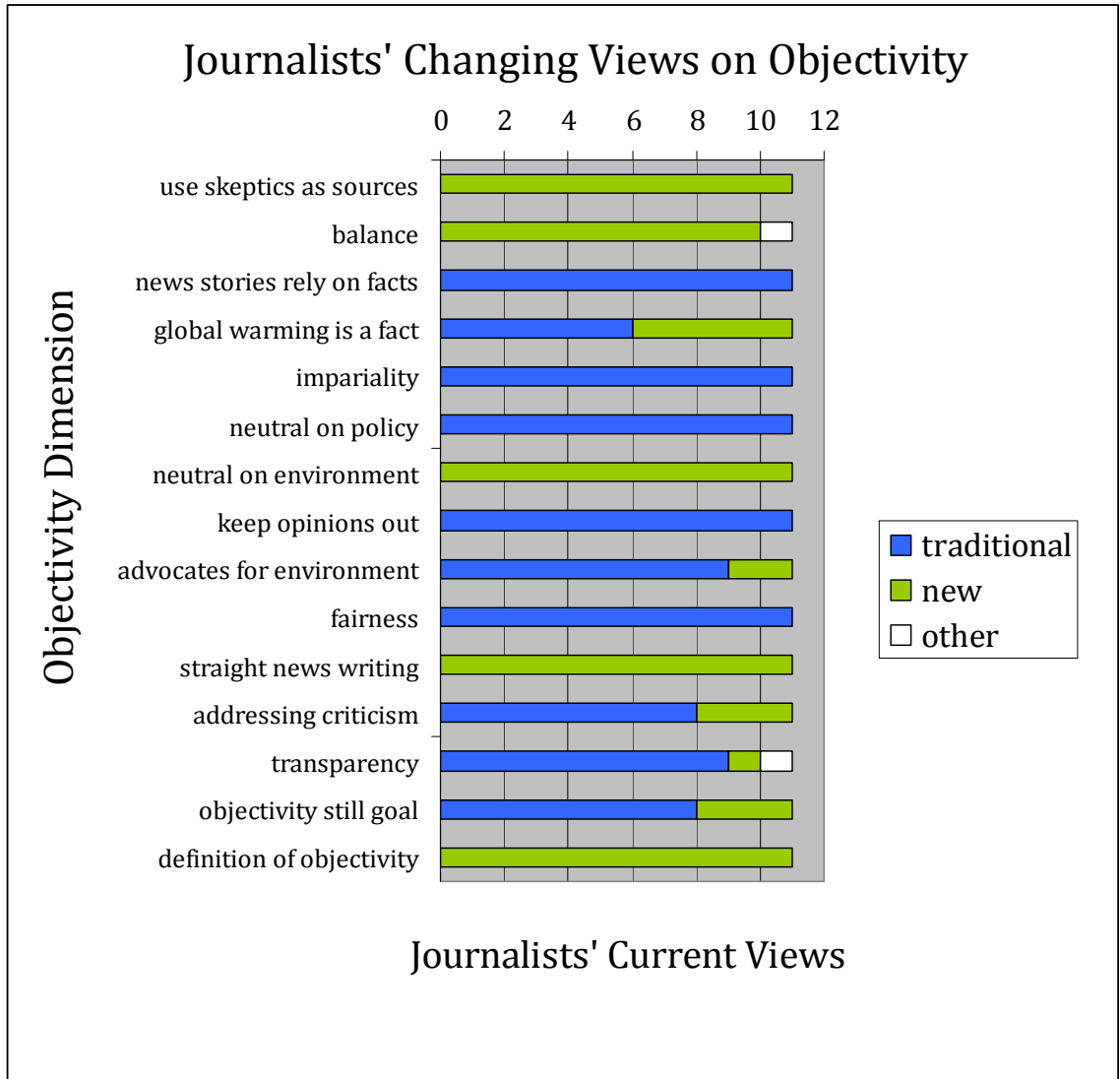
<b>Question Topic</b>	<b>Traditional View</b>	<b>New View</b>	<b>Other</b>
<b>Quoting authoritative sources</b>	Skeptics considered valid sources, used often (0)	Skeptics not used as sources in science stories (11)	
<b>Balance</b>	Two “sides” of story given equal weight (0)	Use “weight of evidence” (10)	No need for explicit balance (1)
<b>Facticity</b>	News stories should rely on objective facts (11)	None (0)	
	Climate change must be attributed to a source (6)	Climate change is a freestanding fact; no attribution needed (5)	
<b>Impartiality</b>	Avoid favoring one side (11)	None (0)	
<b>Neutrality</b>	Reporters should be neutral on policy (11)	None (0)	
	Reporters should be neutral on environment (0)	OK for reporters to care about the environment (11)	
<b>Avoiding opinion in newswriting</b>	Keep personal opinions out of news stories (11)	None (0)	
	Journalists should never be advocates for the environment (9)	OK for journalists to advocate for environment (2)	
<b>Fairness</b>	Being fair is essential (11)	None (0)	
<b>Straight news writing</b>	Inverted pyramid form is most objective story type (0)	No story form is inherently fairer than another (11)	
<b>Addressing criticism</b>	Ignore critics or point to “objective” news practices (8)	Extensively engage with audience (3)	
<b>Transparency</b>	Not comfortable with full disclosure (9)	Open to full disclosure (1)	Unsure (1)
<b>Objectivity</b>	Journalists should still be “objective” (8)	Objectivity is impossible or problematic (3)	
	Define objectivity traditionally (0)	Define goal as systematic method, writing with authority (11)	

## Journalists' Changing Views on Objectivity

Fig. 5

Here, answers to the previous questions are presented in a graphic format.

For explanation of the categories, see Fig. 4.



A major finding of this research is that environmental journalists have radically shifted their view of what makes a story “balanced,” one of the major components of objectivity. The subjects observed that the norm in the late 1990s was to portray climate change as a scientific controversy using roughly “balanced” comments from those who said anthropomorphic climate change was happening and those who said it wasn’t. Today, the reporters viewed such reports as an embarrassing, misleading attempt to adhere to now-outmoded ideas of balance and fairness.

Experienced environmental reporters now advocate applying a “weight of evidence” approach to covering climate change science, where the findings of mainstream scientists are the focus of global warming science stories, and “skeptics” are given little, if any, ink. Several reporters said this approach should apply to all science stories. The old approach to balance still applies to policy or political stories, however.

The reporters expressed support for many of the other traditional dimensions of objectivity: quoting authoritative sources, relying on facts, being impartial, staying neutral, keeping opinions out of newswriting, addressing criticism and being fair. In each case, however, the subjects defined the terms in a way that fit with their experiences. There was no support for the need to structure stories in the inverted pyramid format.

The reporters showed limited support for transparency in journalism.

Disclosing information about methods and sources was good, but most journalists did not feel comfortable revealing their personal opinions.

A majority of the reporters interviewed (8 out of 11) said journalists should still be objective – but their method was actually more subjective, in the sense that they sought to “write with authority,” or interpret their research. The other three journalists rejected the notion of objectivity as being impossible or prone to abuse.

Several reporters said it was the experience of covering climate change that forced them to re-evaluate their ideas of objectivity. One said that, years ago, he approached climate change like a political story where there were two sides. “As I studied it, I realized ... science is not like politics,” he said. He concluded he must apply the more analytical “weight of evidence” approach. He now sees this approach as appropriate for all science stories, whether about vaccine safety or astronomy.

Another reporter said covering climate change cemented his view that objectivity was a sham. “Climate change is the story that led me to those conclusions that I had slowly been coming to anyway,” he said. “It became obvious after covering that story that objectivity isn’t serving readers.”

Interestingly, the two reporters mentioned above came to opposite conclusions about objectivity: the first one emphatically calls himself an objective reporter; the second one says, “There was a time I thought you could be objective, but you really can’t.”

This study’s findings indicate that the core values of journalism are incredibly durable. Even as the newspaper industry suffers from layoffs and

shutdowns, its senior practitioners still honor many of the values of their forebears. However, journalists are willing to adjust their definition of these values to apply to new circumstances. Some veteran journalists are willing to accept new values – such as transparency – but these are the minority.

This study did not directly address agenda setting and framing, but rather used those theories as background for a discussion about objectivity in climate change coverage. However, the study results suggest that journalists have become increasingly aware of the subjective nature of the news “agenda” and the way stories are framed. Subjects in this study felt the media had been duped into framing the climate change story as a controversy through intentional manipulations of the fossil fuel industry. After becoming aware of this mistake, journalists vowed not to be misled again by the oil lobby or any other organized force. This realization appears to have led to an even stricter, more traditional view of what constitutes an authoritative news source. Government and university scientists are the favored sources now, and activists for industry or environmental causes appear more questionable.

This study advances the understanding of objectivity by illuminating how veteran environmental journalists view this norm. The subjects in this study are far more steeped in traditional journalism views than the average reporter working today, thanks to their education and time spent in the field. They are, in the words of one subject, “old-school” – and proud of it. The demographics of these reporters suggest their views on objectivity may differ from the incoming generation of

reporters, whose views are likely to be more liberal. However, as the subjects noted, the lack of new hires in the profession means that not many young reporters are coming on-line to replace their elders. Reporters who are given the environmental beat tend to be experienced journalists already, and therefore more prone to traditional views. Additionally, environmental beat reporters are heavily socialized through organizations such as the Society of Environmental Journalists, which was founded by, and is still heavily influenced by, journalists from the legacy media. These factors mean that reporters who are asked to cover climate change – known as one of the toughest stories in the newsroom – may tend towards a more conservative, traditional view of objectivity. This may help explain why a majority of subjects in this study said they thought objectivity was important, or essential, even as they redefined what that meant.

Objectivity is a riddle that has confounded journalists nearly since its origin more than 100 years ago. Can journalists recognize they are not, cannot be, and never will be objective in the literal sense of the word, and yet somehow *still* be objective? The answer may lie in a suggestion from a longtime journalist Richard Mullins, a friend of the author's. In an article posted to the Knight Digital Media Center blog, Gahrn (2010) explained how Mullins joined in a recent Facebook discussion about journalistic objectivity. After he observed the usual arguments about whether objectivity was possible or desirable, Mullins asked: "When will the profession realize, intellectually and practically, that journalism has an *objectivity of method*?" He explained his perspective further in an interview posted in the article.

“In journalism, objectivity stems from how we do our reporting, how good our facts are—not who we are as people,” he said. “Your journalistic method must be definable and defensible. Someone else might pick a different method, but you should at least be able to explain and defend yours.”

Reporters who cover climate change seem to be moving in that direction. The subjects in this study often compared themselves to scientists: They start with a hunch (or hypothesis), ask questions, do research, and then analyze results. Conclusions must be presented with appropriate caveats. Outliers cannot be ignored. New findings must be folded continually into the body of work.

The scientific method can produce false starts – just recall the “global cooling” prediction of the 1970s – but it is, at least, a discipline that should be self-correcting over time. While stories for daily publication do not go through peer review before publication – and most journalists could not and would not submit to such a practice – the Internet provides increasing opportunities for openness and dialogue. Thoughtful journalists, such as those interviewed here, continue to test their beliefs and practices in a systematic way.

Philip Meyer, the Knight Chair in Journalism at the University of North Carolina, has been promoting the use of the scientific method in journalism for decades. In *Precision Journalism*, the first edition of which was written in 1969, Meyer advocated that journalists apply social science methods to their work. By doing their own research, journalists could stop pretending to be “passive innocents” and try to reveal something of the truth (1991). Two of his suggestions



caught on: news organizations began doing their own political polling, and journalists began harnessing the power of computers and databases to do computer-assisted investigative reporting. However, the media has not widely adopted the discipline of the scientific method, Meyer lamented in an essay in *Nieman Reports* (2004b). Meyer again urged the media to abandon the “fake” “pseudo-objectivity” that dominated the old mass media era in favor of “true objectivity.” Meyer’s essay wasn’t specifically addressing global warming coverage, but his advice seems appropriate:

As the venues for spin and advocacy multiply, there ought to be a market for a trusted, objective source in the original, scientific sense. True objectivity is based on method, not result. Instead of implying that there is an equal amount of weight to be accorded every side, the objective investigator makes an effort to evaluate the competing viewpoints. The methods of investigation keep the reporter from being misled by his or her own desires and prejudices (2004b).

This idea is echoed on the Committee for Concerned Journalists’ call for journalists to practice “a discipline of verification,” their version of objectivity (1997):

When the concept of objectivity originally evolved, it did not imply that journalists are free of bias. It called, rather, for a consistent method of testing information – a transparent approach to evidence – precisely so that personal and cultural biases would not undermine the accuracy of their work. The method is objective, not the journalist. Seeking out multiple witnesses, disclosing as much as possible about sources, or asking various sides for comment, all signal such standards. This discipline of verification is what separates journalism from other modes of communication, such as propaganda, fiction or entertainment. But the need for professional method is not always fully recognized or refined. While journalism has developed various techniques for determining facts, for instance, it has done less to develop a system for testing the reliability of journalistic

interpretation.

This concept comes full-circle to Lippman's zest for the objective method, articulated almost 90 years ago (Lippmann, 1922). (For further advice on applying the scientific method to climate change reporting, see *Communicating on Climate Change: An Essential Resource for Journalists, Scientists and Educators* by Bud Ward, 2008.)

Environmental journalists have undertaken their own scientific field research, such as testing water and air for pollutants, and found some startling and useful results. Most reporters do not have the expertise or the means to conduct their own climate research, so they must rely on the science that others produce. However, they can, and do, apply the scientific method to evaluating that work and the sources who provide it.

It may be worth noting that only three of the 11 journalists interviewed here had science degrees. Some also had science-related fellowships. While all of these reporters have undergone extensive on-the-job training and diligently sought out other opportunities, it could be that more science education would improve journalists' comfort level with deliberately applying the scientific method in their own work. Of course, journalists would have to be careful not to become compromised by too cozy a relationship with scientists, or any other group. Journalists working any beat must be watchful to avoid reporting *for* their subjects instead of *on* them.

Unfortunately, this solution is expensive. Attending conferences, taking

courses in science topics, and going to workshops and fellowships are pricey and require days away from the newsroom. Conducting scientific tests or finding and analyzing data are also resource-intensive. In today's media market, managers are unlikely to approve staff members' requests for more time and money. In addition, newsroom cutbacks and layoffs of senior reporters do not bode well for increasing scientific expertise within the environmental journalism corps at large.

One interesting illustration of this challenge was the controversy surrounding the "Climategate" e-mails referenced earlier (p. 27). Critics used the East Anglia University e-mails as ammunition for their claims of a climate conspiracy. Scientists said there was no fakery; climate change was real. Block (2010) and Boykoff (2010) cited media coverage of this dispute as an example of the "balance as bias" problem because the most of the media reported the story in "he said, she said" fashion.

Several of the journalists interviewed for this study mentioned Climategate as a test of journalism philosophy. At the time the story broke, two of the journalists debated whether it was a story. One insisted that it was a story because it was becoming a political hurricane, giving "skeptics" more power than they had had in years. The other insisted it was not a story because, regardless of whether the scientists in question had done something unethical, it would not amount to a pebble on a mountain of evidence, scientifically speaking.

In the end, the story "exploded" and "sucked the oxygen out of the room," journalists said, because so much coverage was devoted to that instead of valid

science stories. “Climategate was a concerted political effort the whole time” by people who want to “obfuscate and confuse things,” one reporter said. “A lot of reporters followed along like sheep.”

The Associated Press was credited with shutting down some of the hype by assigning five reporters to read the 1,000 e-mails, about a million words in all. The AP also asked seven experts in research ethics, climate science and science policy to review material from the e-mails. The results, according to AP’s published story:

E-mails stolen from climate scientists show they stonewalled skeptics and discussed hiding data — but the messages don't support claims that the science of global warming was faked, according to an exhaustive review by The Associated Press. The 1,073 e-mails examined by the AP show that scientists harbored private doubts, however slight and fleeting, even as they told the world they were certain about climate change. However, the exchanges don't undercut the vast body of evidence showing the world is warming because of man-made greenhouse gas emissions (Borenstein, Satter, & Ritter, 2009).

Once the AP had done the research, other journalists could refer to its findings and other reviews. “In stories when Climategate comes up, I’ll say four independent reviews have concluded these guys weren’t colluding,” one journalist said. Without someone taking the time to review the evidence, however, journalists would have been left merely playing the two sides against each other in typical political style. This kind of time-consuming analysis is beyond the normal budget of most news organizations in today’s market.

These pressures were obvious to the subjects of this study. The journalists interviewed here understood that they were key communicators in an important

global discussion. One reporter described climate change as the most challenging environmental issue of our time because it touches on so many aspects of life, such as energy, development, food production and population. “Global warming is challenging people’s fundamental values; it threatens their very way of life. The climate issue has become kind of a magnifying glass – you’re bringing all those rays of light together in a fairly intense focus,” he said. “It’s also coming at a time when journalism itself is changing dramatically,” along with the rest of society.

### **8b. Limitations and Suggestions for Future Research**

There are limitations to this research. This study did not attempt quantitative analysis, for example, to determine the number of stories written about global warming, or the number of times certain sources or story frames were used.

The sample size also was not large enough to determine any statistically significant trends concerning journalists’ views on objectivity. In addition, the search for subjects was complicated by the constantly changing journalism marketplace, as many mainstream reporters have left the field on their own or due to layoffs. The selection of subjects also was undoubtedly influenced by the author’s familiarity with individual journalists and by her membership in SEJ. Other reporters may have different views on the topics discussed here.

Specifically, the study could have included more women and more reporters from the western part of the U.S. This would have made the sample more

representative of environmental reporters as a whole, although it may not be representative of the smaller target population addressed here.

Suggested areas for future study include a fresh quantitative evaluation of climate change coverage, to see whether Boykoff's "balance as bias" phenomenon (e.g., 2004) is still dead. Besides evaluating major newspapers, this research could include online publications and cable and television shows.

Research could also analyze how the quantity and quality of communication between scientists and journalists impacts news coverage.

A future study could also survey larger groups of reporters about their views on objectivity. This study could examine factors, such as the number of years in journalism or the type of publication, that may influence support for objectivity.

Now that the environmental journalism community seems to have adopted the "weight of evidence" approach to science reporting, it will be interesting to see how that applies to future scientific controversies. What will it take for journalists to perceive a "tipping point" in the scientific consensus? Will that point come sooner with each successive controversy?

It would also be interesting to further explore exactly how journalists determine the weight of evidence on a given issue. Do journalists feel they must interview 100 scientists or read 100 papers to have an adequate sense of where the weight of evidence lies, or is it sufficient to cite a source such as the IPCC, which does the work of evaluating the field?

Many other issues raised during this research could not be addressed. For

example, the predilection of journalists to find the exception, the outlier, the “man bites dog” story should be part of the objectivity discussion. Two traditional news values in journalism are “novelty” and “conflict” (e.g., Harrower, 2007, p. 17), so it seems of little surprise that journalists covering climate change initially found it hard to resist the “skeptics.” Even though the evidence today in support of anthropogenic climate change may be overwhelming, many journalists in this study said they left room in their worldview for the possibility that the consensus could be wrong. Journalists want to be no one’s patsy – whether the oil lobby or the earnest researcher. In fact, the enormity of the consensus may generate a degree of pushback, as evidenced by a 2006 column in *The Boston Globe* where columnist Alex Beam chafed at Al Gore’s order for journalists to “ignore” any “tales of doubt” about climate change because they were untrue:

I ask you: Are these convincing arguments? And directed at journalists, who are natural questioners and skeptics, of all people? What happens when you are told not to eat the apple, not to read that book, not to date that girl? Your interest is piqued, of course. What am I not supposed to know? (Beam, 2006).

Of course, Beam is not an environmental reporter specializing in this field, and he was criticized in the blogosphere for his commentary. Nonetheless, both journalists and media critics should be aware that this tendency could create an unintended kink in the objective method.

Another point worth further exploration is the role of editors in constructing the climate change story. This seed for particular study was planted when the author’s editor demanded that “skeptics” be added to a story. Several journalists

interviewed here reported getting major interference from editors on their climate change reporting – usually in the direction of making anthropogenic climate change appear to be less certain. Some newsroom squabbles are to be expected, but have editors influenced this particular narrative more than others? If so, should more effort go into training and education for editors, to bring them up to speed with reporters who have benefited from fellowships, handbooks and conferences?

Of course, the topic of objectivity provides endless fertile ground for study. The questions at play here are enormous. What direction will mainstream journalists go in their understanding of objectivity? Will objective journalism find a permanent home in the American marketplace? Will the breed of “objective” mainstream reporters involved in this study have an outlet for their work in 10 or 15 years, and if so, what will that look like? As scary as that last question may be for those in the field, this author finds hope in the passion and professionalism that these reporters bring to their work. It brings to mind the famous saying attributed to former British Prime Minister Winston Churchill: “Democracy is the worst form of government, except for all those other forms that have been tried” (Langworth, 2009). Perhaps objective journalism is the worst form of journalism, except for all the others. Perhaps, as imperfect as it is, it contains enough wisdom in its DNA to repopulate a future form of journalism that is both honest and true.



## **Appendix I**

### **Informed Consent Waiver**

#### **Project Title:**

Climate Change in the Newsroom:  
Changes in the Way Journalists Cover Global Warming

#### **Researcher's Name and Contact Information:**

Sara Shipley Hiles, primary investigator: cell phone, 270-991-0146;  
e-mail, saraship@gmail.com

#### **YOU ARE BEING ASKED TO VOLUNTEER TO PARTICIPATE IN A RESEARCH STUDY.**

You are being asked to participate in a research study. This research is being conducted to help *investigate changes in media coverage of climate change, particularly concerning the way journalists approach the story*. When you are invited to participate in research, you have the right to be informed about the study procedures so that you can decide whether you want to consent to participation. This form may contain words that you do not know. Please ask the researcher to explain any words or information that you do not understand. You have the right to know what you will be asked to do so that you can decide whether or not to be in the study. Your participation is voluntary. You do not have to be in the study if you do not want to. You may refuse to be in the study and nothing will happen. If you do not want to continue to be in the study, you may stop at any time without penalty or loss of benefits to which you are otherwise entitled.

#### **WHY ARE THEY DOING THIS STUDY?**

The purpose of this research is to investigate changes in media coverage of climate change, from the perspective of the reporter. The research will involve interviews with 10-12 experienced environmental journalists. Subjects will be asked to a series of questions concerning their perceptions of how climate change coverage has changed in the past 5-10 years.

#### **HOW LONG WILL I BE IN THE STUDY?**

This study will take approximately 1.5 to 2 hours total.

There are 4 phases to this project.

- Phase I will involve you filling out a brief background information sheet and/or submitting a resume via e-mail. It will take approximately 5-15 minutes.
- Phase II will involve you selecting three of your own stories about climate change from the past 5-10 years and e-mailing the content (or links) to the primary investigator. This is expected to take approximately 30 minutes.
- Phase III will involve an interview between you and the primary investigator, conducted over the telephone or via Skype at a mutually convenient time scheduled in advance. It will last 45 minutes to an hour.
- Phase IV will involve the investigator asking follow-up questions via e-mail if necessary to clarify anything. It is expected to take less than 15 minutes.

#### **WHAT AM I BEING ASKED TO DO?**

You will be asked to:

- Fill out a brief background information sheet and/or submit a resume.

- Select three of your own stories about climate change and e-mail the content (or a link) to the primary investigator.
- Participate in a phone interview lasting 45 to 60 minutes.
- Answer brief follow-up questions if needed.

### **HOW MANY PEOPLE WILL BE IN THE STUDY?**

There will be about 10-12 people in the study. All subjects will be experienced environmental journalists who have been covering the beat at least 5 years.

### **WHAT ARE THE BENEFITS OF BEING IN THE STUDY?**

You are not expected to receive any direct benefits from the research, and you will not be paid. The only benefit is knowing that you will be helping to enhance scholarly and professional understanding of climate change coverage. There is no anticipated cost to the subjects beyond their time.

### **WHAT ARE THE RISKS OF BEING IN THE STUDY?**

Your participation in this study is not expected to cause you any risks greater than those encountered in everyday life. However, you may experience mild feelings of psychological discomfort associated with answering questions. You may choose to not answer a question or to withdraw from the research at any time. Emphasis will be placed on maintaining the confidentiality of subjects.

### **WHAT OTHER OPTIONS ARE THERE?**

There is no alternative option in this study. You have the option of not participating in this study and will not be penalized for your decision.

### **CONFIDENTIALITY**

Your identity and participation will remain confidential. No people outside the research team will have access to your name or any other personally identifying information. Interviews done as part of the study will be recorded with audio equipment, and subjects will be reminded of this procedure prior to commencing the interview. Audio recordings, notes and other data collected will be maintained in a secure network accessible only via research team password.

Your name and personally identifying information will not be included in published results. Subjects will be identified only by gender (he/she) and by a general description of the publication stating the region of the country (e.g., Midwest, Southern, Western), type (daily newspaper, online, etc.) and size (small, medium, large). Any other personal information collected, such as age or educational background, will be used only in aggregate. Direct quotations of text from stories written by the subjects may be used, but only in a way that does not reveal the subject's identity. The research team understands the sensitivity many journalists have about discussing their personal opinions and will protect the subjects' identities.

### **WILL THE RESEARCHER TELL ME IF SOMETHING CHANGES IN THE STUDY?**

Informed Consent is an ongoing process that requires communication between the researcher and participants. The participant should comprehend what they are being asked to do so that they can make an informed decision about whether they will participate in the research study. You will be informed of any new information discovered during the course of this study that might influence your health, welfare, or willingness to be in this study.

### **WHERE CAN I LEARN MORE ABOUT PARTICIPATING IN RESEARCH?**

The Campus Institutional Review Board offers educational opportunities to research participants, prospective participants, or their communities to enhance their understanding of research involving human participants, the IRB process, the responsibilities of the investigator and the IRB. You may

access the Campus IRB website to learn more about the human subject research process at <http://www.research.missouri.edu/cirb/index.htm>

### **WHOM DO I CONTACT IF I HAVE QUESTIONS, CONCERNS, OR COMPLAINTS?**

Please contact Sara Shipley Hiles if you have questions about the research. Additionally, you may ask questions, voice concerns or complaints to anyone on the research team.

#### **Investigator Contact Information**

##### **Primary Investigator:**

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**WHOM DO I CONTACT IF I HAVE QUESTIONS ABOUT MY RIGHTS, CONCERNS, COMPLAINTS OR COMMENTS ABOUT THE RESEARCH?**

The Campus Institutional Review Board approved this research study. You may contact the Campus Institutional Review Board if you have questions about your rights, concerns, complaints or comments as a research participant. You can contact the Campus Institutional Review Board directly by telephone or email to voice or solicit any concerns, questions, input or complaints about the research study.

**Campus Institutional Review Board**

483 McReynolds Hall

Columbia, MO 65211

573-882-9585

E-Mail: [umcresearchcirb@missouri.edu](mailto:umcresearchcirb@missouri.edu)

Website: <http://www.research.missouri.edu/cirb/index.htm>

**WILL I GET A COPY OF THIS FORM TO TAKE WITH ME?**

A copy of this Informed Consent form will be given to you before you participate in the research.

**SIGNATURES**

I have read this consent form and my questions have been answered. My signature below means that I do want to be in the study. I know that I can remove myself from the study at any time without any problems.

*E-signature:* Please type your name and date in the space below, save the form, and return it via e-mail.

Your Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix II

### Background Questions for Study Participants

*Note: All identifying information will be held confidential by the researcher and will not be made public at any point during or after this research. A résumé may be submitted in lieu of filling out job and education data.*

Name:

Age:

Gender:

Current job title:

Current publication:

Years in this position:

Years in journalism:

Years covering environmental topics as a major component of your work:

Years covering climate change:

College degrees (school, field, year):

Professional organization memberships:

## Appendix III

### Interview Questions

[Reminder for researcher: The focus of questions should be: *Objectivity as an occupational norm – how has it changed?*]

The following script breaks interview into four sections:

- 1) Opening questions
- 2) Dimensions of objectivity questions
- 3) Transparency
- 4) Wrap-up/general questions on objectivity]

#### 1) Opening questions:

- Based on your experience, how do you think climate change coverage has changed in mainstream media in the past 5- 10 years?
- When did you notice these changes?
- What reasons would you give for these changes?

#### 2) Discuss dimensions of objectivity - how reporters try to construct an

#### objective story on climate change

- Quoting authoritative sources:
  - Several years ago, many journalists quoted climate “skeptics” in their stories. Should this still happen today? Why or why not?
  - How should environmental journalists decide which sources to quote on climate change?
- Balance:
  - Do you think that environmental journalists should try to write “balanced” stories on climate change?
  - Has the definition of a “balanced” story changed?
- Facticity:

- Do you think journalists should try stick to reporting “just the facts”?
  - When journalists write about climate change now, should they state it as a fact or should they attribute it scientists?
- Impartiality:
  - Should journalists try to be impartial when covering climate change?
- Neutrality:
  - Should journalists be neutral when covering climate change, as if they have no preference about the outcome?
- Avoiding opinion in newswriting:
  - Should journalists keep their opinions out of their stories on climate change?
  - Should journalists ever be advocates for the environment?
- Fairness:
  - How should journalists attempt to be fair when covering climate change?
- Straight news writing:
  - Concerning the way a story is written, is it any fairer to write a story in an inverted pyramid or as a feature?
- Addressing criticism:
  - How should journalists respond to criticism about their climate change stories?

### 3) Transparency:

- Do you think transparency in journalism is a good idea?

### 4) General objectivity questions

- Should journalists try to be objective in their coverage of climate change?

- How do you define objectivity?
- What is the future of “objectivity” for journalists?



## **Appendix IV**

### **Climate change: The science and politics of global warming**

*Content adapted from the Associated Press, 2009, with additional research.*

*For an interactive version of this timeline, see*

*[http://www.msnbc.msn.com/id/34365586/ns/world\\_news](http://www.msnbc.msn.com/id/34365586/ns/world_news)*

**1750** - Before Industrial Revolution, atmosphere holds 280 parts per million of carbon dioxide (CO<sub>2</sub>).

**1898** - Swedish scientist Svante Ahrrenius calculates that CO<sub>2</sub> from coal and oil burning will warm the planet.

**1955** - U.S. scientist Charles Keeling finds atmospheric CO<sub>2</sub> has risen to 315 parts per million.

**1971** - First international conference on climate change is held in Sweden.

**1985** - An international climate conference in Austria warns of significant warming in next century.

**1986** - Atmospheric CO<sub>2</sub> reaches 350 ppm.

**1988** - NASA scientist James Hansen tells U.S. Congress global warming "is already happening now."

**1988** - U.N. creates Intergovernmental Panel on Climate Change (IPCC), a clearinghouse for climate science.

**1990** - IPCC issues its First Assessment Report, noting Earth is warming.

**1992** - Climate treaty sets voluntary goals to lower CO<sub>2</sub> and other greenhouse gas emissions.

**1995** - IPCC's Second Assessment Report says the "balance of evidence suggests a discernible human influence on global climate."

**1997** - Climate treaty parties approve Kyoto Protocol mandating emission cuts by industrial nations, approach rejected in advance by U.S. Senate.

**1998** - Records kept by the British meteorological office show this year as the warmest.

**2001** - IPCC's Third Assessment Report cites "new and stronger evidence" that mankind is altering climate.

**2001** - U.S. President George W. Bush renounces Kyoto Protocol.

**2004** - Russia ratifies Kyoto Protocol, bringing it into force in February 2005.

**2005** - Warmest year globally since record keeping began in mid-19th century.

**2006** - British government's Stern Report warns cost of inaction on climate would far outweigh cost of reducing emissions.

**2007** - IPCC Fourth Assessment Report says most warming is "very likely" due to manmade emission. Global temperatures rose 1.3 degrees F from 1906 to 2005.

**2007** - IPCC and former U.S. Vice President Al Gore win Nobel Prize for their climate work. In Bali, annual U.N. climate conference agrees on two-year timetable for negotiating successor agreement to Kyoto Protocol.

**2007** - Supreme Court rules that EPA has authority to regulate carbon dioxide and other greenhouse gases.

**2008** - Barack Obama is elected U.S. president, promising action on climate.

**2009** - Atmospheric CO<sub>2</sub> hits a record 390 ppm.

**2009** - EPA finds that greenhouse gases endanger public health, enabling the agency to regulate them.

**2009** - Delegates at U.N. conference in Copenhagen, Denmark, fail to reach binding climate treaty, instead adopting voluntary agreement to limit rise in global temperatures to no more than 3.6 degrees F beyond pre-industrial levels.

**2009** - E-mails stolen from climate scientists at East Anglia University give ammunition to "skeptics" alleging fraud; reviews find they didn't fake science.

**2010** - "Cap and trade" bill limiting CO<sub>2</sub> emissions dies in U.S. Senate.

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## VITA

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Hiles was born in Rochester, N.Y. and grew up in Marthasville, Mo. She received a bachelor's degree in communications from Loyola University in New Orleans and expects to complete a master's degree in journalism from the University of Missouri-Columbia in December 2010. She lives in Bowling Green, Ohio with her husband and son.