TV Weathercasters' Views of Climate Change Appear to Be Rapidly Evolving

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For more than a decade, academic researchers and members of the broadcast meteorology community have been studying TV weathercasters' views about human-caused climate change. The primary motivation behind this research has been to determine the degree to which these TV news professionals—who, in most cases, are the only scientist in their newsrooms—are up to speed on the science of climate change so that they can report on it.

The earliest studies painted a picture of a field divided. In 2001, Kris Wilson, a former broadcast meteorologist turned academic researcher, surveyed randomly selected TV weathercasters ($n = 217$; response rate = 48%). Only about one-quarter (22%) of his respondents were convinced that "the theory of global warming is accepted by most atmospheric scientists," while over half (58%) thought there was considerable disagreement among these experts. In 2008, broadcast meteorologist Sean Sublette surveyed 85 of his peers and found that only a small minority (20%) identified CO_2 as the main cause of global warming, while most identified "solar and CO_2" (40%) or "natural variability" (26%). In a 2008 survey of American Meteorological Society (AMS) listserv members ($n = 121$; response rate approximately = 15%), Wilson found that less than half of weathercasters (45%) agreed with "the IPCC conclusion: Warming of the climate system is unequivocal," while over half disagreed (35%) or were neutral (21%). He also found that only one-quarter of weathercasters (24%) agreed with "the IPCC conclusion: Most of the warming since 1950 is very likely human-induced," while half (50%) disagreed and one-quarter (25%) were neutral.

Surveys in 2010 and 2011 by Maibach and colleagues found somewhat higher rates of weathercasters convinced of climate change. The 2010 study—an attempted census of AMS and National Weather Association (NWA) broadcast members ($n = 571$; response rate = 52%)—found that more than half (54%) indicated global warming is happening, while one-quarter (25%) indicated it is not, and 21% responded they did not know. The 2011 study—another attempted census of AMS and NWA broadcast members ($n = 433$; response rate = 33%)—found that more than half (54%) of weathercasters indicated that climate change "caused mostly by human activity" (19%) or "caused more-or-less equally by human activity and natural events" (35%) is happening, while 29% indicated that climate change "caused mostly by natural events" is happening. Fewer than 1 in 10 weathercasters felt climate change was not happening (9%), or they did not know (8%).

More recently, to determine if weathercasters' views on global warming continued to evolve, in January 2015, January 2016, and again in January 2017, we attempted to conduct censuses of TV weathercasters. Rather than limit the survey to broadcast members of AMS and NWA, as had been

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done previously, we searched Cision, a commercially available list of news professionals, using the terms *weather* and *meteorology*—a process that yielded 2,226 names. We then searched the websites of all English language TV news stations to validate and update the Cision list; this two-step process identified 2,149 professionals working in broadcast meteorology in the United States in 2015 and 2,100 in 2016. Invitations to participate in the survey were sent to all of these people; 478 weathercasters participated in 2015 (response rate = 22%) and 646 participated in 2016 (response rate = 32%). In 2017 we updated the list again, yielding 463 participants out of 2,358 professionals identified (response rate = 22%). Thus, these surveys were more inclusive—and presumably more representative of the full range of views in the weathercaster community—than any prior study.

We began these surveys by stating the AMS definition of climate change; only then did we ask respondents for their views. No prior weathercaster survey has used the AMS definition (or any science society's formal definition) prior to asking questions about climate change. This was an important methodological improvement over prior surveys in that it grounded respondent's answers in a standard scientific definition of climate change.

The full topline results of those studies are available online: see Maibach et al. (2015, 2016, 2017). Here we briefly present several key findings that strongly suggest there has been a continued evolution in the broadcast meteorology community with regard to members' views on climate change.

Prior surveys (including our own) have shown large discrepancies between the range of views among broadcast meteorologists and the range of views among climate scientists, finding moderate to high rates of climate change skepticism among broadcast meteorologists. In contrast, our 2016 and 2017 surveys, based on a broader sample and a more rigorous definition of climate change, found the following:

- More than 90% of weathercasters indicated that climate change is happening and approximately

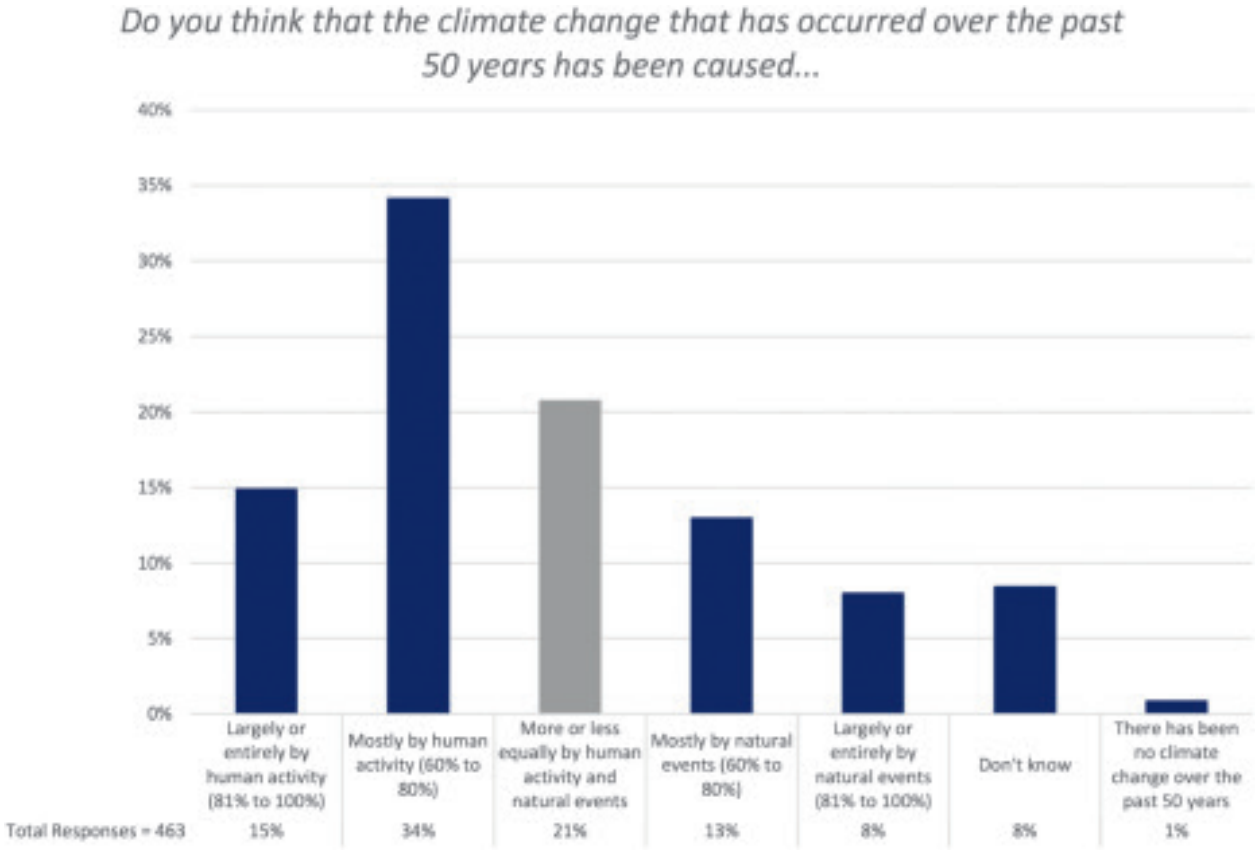

Fig. 1. Distribution of weathercasters' beliefs about the degree to which climate change over the past half century is human caused (January 2017).

80% indicated that human-caused climate change is happening (see Fig. 1).

- A majority of weathercasters (54% in 2016; 62% in 2017) indicated that climate has changed in their communities over the past 50 years, including average temperature, heat waves, heavy downpours, total precipitation, and length of the frost-free season. As shown in the most recent survey, many of those who noted local climate change over the past 50 years indicated harmful local impacts on water resources (nearly half), agriculture (half), and human health (33%) in that period. In 2016 we found that a larger proportion of weathercasters think there will be bigger impacts—of all these types—over the next 50 years.
- Nearly 60% of weathercasters (in 2017) are at least somewhat interested in reporting on air about projected local climate change impacts and approximately 90% of weathercasters believe their viewers are at least slightly interested in learning about the local impacts of global climate change.
- The majority of weathercasters are interested in reporting on a range of local impacts, including extreme precipitation and flooding (77%), drought and water shortages (75%), extreme heat events (74%), impacts on local wildlife (65%), impacts on air quality (63%), impacts on crops and livestock (62%), impacts on human health (60%), and wildfires (53%). Nearly half of the 2017 respondents indicated that they had reported on the local impacts of climate change on social media (this response had grown from 39% in 2016); many of the weathercasters inform the public on these impacts on air and on a station website. Approximately 40% of the respondents cover these impacts in school visits as well.

In short, a strong majority of weathercasters are now convinced that human-caused climate change is happening, and many feel they are already witnessing harmful impacts in their communities. Moreover, many weathercasters are beginning to explore ways of educating their viewers about these local impacts of global climate change.

Some caution is warranted in judging the extent to which weathercasters' views and actions have changed over time, because—with the exception of the two most recent surveys—each of the surveys conducted to date has used different methods. It does appear, however, that the broadcast meteorology community has undergone a significant evolution in its views about—and its reporting on—human-caused climate change, especially over the past five years. Indeed, in our 2016 survey, 21% of weathercasters indicated that their opinions about climate change had changed in the past five years—with 82% of these people stating that they have become more convinced that human-caused climate change is happening.

This evolution of views and reporting practices may be indicative of a newly emerging role for weathercasters—that of local climate educator. AMS has long championed the role of "station scientist" for broadcast meteorologists. The role of local climate educator—or local climate reporter—can add a significant new and important dimension to the role of the station scientist.

In a recent In Box article (Placky et al. 2016) we described *Climate Matters,* an extensive set of climate education resources available to members of the weathercaster community. These resources should make it easier for broadcasters to perform this new job function well.

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FOR FURTHER READING

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