How to talk about climate change on social media

January 31 2019, by Matt Shipman

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Extreme weather events, from hurricanes to snowstorms, often serve as focal points for discussions about global climate change. And many of those discussions take place on social media. But do social media serve as good platforms for climate change discussion? And do extreme weather events serve as good opportunities for informing the public about the effects of climate change?

To address these questions, an international team of researchers delved into Twitter data, focusing specifically on conversations related to several extreme weather events that affected the United States.

The results were all over the map, with the conversations varying widely from event to event. But that, in itself, shed some light on ways that social media can be used to effectively share information related to climate change.

To learn more, we spoke with Bill Rand, co-author of a paper on the research and an associate professor of marketing in NC State's Poole College of Management.

The Abstract: What question, or questions, were you setting out to address with this work?

Bill Rand: Our fundamental question was: How do extreme weather events affect the discussions of climate change on social media? Social media has become the dominant form of public discussion in recent years, and it has a large influence on public opinion. Nowadays, even mainstream media is constantly referring to social media, and discussions on social media, especially Twitter. As such, if we can understand how external events, such as extreme weather, affect discussions of scientific issues, such as climate change, then we can gain a better understanding of how people are learning about and forming opinions around important matters such as climate change.

Another more general way to ask our research question would be: How do external events affect public education and conversations around scientific topics, especially when those topics have potential political impacts? In today's world, online discourse has become more and more polarizing, and if scientists have the goal of increasing education and the dissemination of scientific knowledge, then understanding how the public participates in this conversation is critical.

TA: You're a marketing expert. How did you end up

working on a study about climate change?

Rand: First, my primary research in marketing is focused on understanding the diffusion of information. How do people find things out? What do they do with that information once they have it, and how do they pass that information on to others? Those questions are very much at the core of this paper. How do people find out about climate change on social media? How do they analyze that information in the light of extreme weather events? How do they frame that knowledge when they pass it on to others?

Traditionally, marketing involves the study of how brands and consumers interact on social media, but looking at the conversations of the general public, scientists and politicians is very similar. My research group has also spent a substantial amount of time collecting and analyzing Twitter data, so, for this project in particular, my skill set complemented my co-authors' expertise—since most of them are from public policy and climate change modeling backgrounds.

Moreover, personally I'm very interested in how we can take marketing skills and use them for the benefit of society. Social media conversations dominate our world, and understanding how to navigate them can be useful for any not-for-profit or advocacy group interested in creating a better world. As a result, I am very interested in understanding how can I help scientists to use social media and other marketing methods to increase awareness and knowledge about climate change.

TA: What did you find with this study?

Rand: We examined three major extreme weather events: Hurricane Irene (2011), Hurricane Sandy (2012) and Snowstorm Jonas (2016). We found that the conversation around climate change was framed

differently in each of those events. The discussion around Irene, which was the earliest event, focused on criticism of climate change denial; Sandy happened in the midst of the 2012 U.S. presidential election, and so the conversation focused on a political and ideological framing. Discourse during Jonas seemed to be divided between posts discussing climate change denial and scientific links explaining how extreme weather in all forms is linked to climate change.

Basically, our finding was that the exact effect of extreme weather events on social media conversations about climate change varies substantially over time. To understand how people are likely to frame conversations about climate change requires an understanding of how social issues, political issues and characteristics of the event affect and alter the topics of these conversations over time.

TA: So, if the best way to communicate effectively varies based on the circumstances, what advice do you have for people trying to raise awareness about the effects of global climate change?

Rand: The fact that the discourse and framing of the conversations around climate change were so distinct in each of these contexts means that scientists and advocacy groups who are interested in educating the public about climate change cannot use the same tactics every time. The tactics need to be adapted to the current topics people are talking about on social media. In other words, climate change efforts need to be framed within the context of conversations people are already having.

This is a hypothesis, since we were not able to test it. But people who are interested in raising awareness about the effects of global climate change should not enter into the conversation assuming that just repeating the truest science will win out. Instead, they should be willing to adapt their

framing of the science to better mesh with the current focus of conversations about climate change.

TA: Are there specific social media tools and techniques that can facilitate that sort of dynamic messaging? Or is that the next frontier for social media platforms and technologies?

Rand: Social media analytics can really be thought of in terms of three phases: (1) descriptive analytics, or what are people discussing right now? (2) predictive analytics, or what will people be discussing in the future? and (3) prescriptive analytics, or what should I tweet about to best promote the content that I am interested in distributing? We are really still in Phase 1 for the vast majority of tools in existence, and this paper is an example of this.

So, dynamic messaging of the kind that I described is very much the next frontier of social media platforms and technologies. However, in my research group, we are working on predictive and eventually even prescriptive analytics. For instance, recently we have been involved in building models that could simulate dynamics of Twitter, Reddit and Github simultaneously and make predictions about the level of activity of the platforms and whether certain conversations will continue or die off in the near future. Initial results seem to indicate that we can make these predictions with relatively good accuracy, and we hope to share more of those results in the near future. This is an exciting area of research and has profound implications not just for scientific advocacy around global climate change, but also for helping to better come to grips with the social media conversations that are dominating our modern times.

Provided by North Carolina State University