Reporting threats: An experimental examination of the way journalists report about terrorism and climate change when these dangers put infrastructure and people at risk equally.

Abstract: Do journalists report more negatively about terrorism than climate change when the two pose the same threats to infrastructure and people? We found, using a registered experiment, that journalists write about terrorism more negatively than climate change regardless of their political, professional, and demographic characteristics. Getting the public news that reflects the relative dangers terrorism and climate change pose requires changing the way reporters understand these issues.
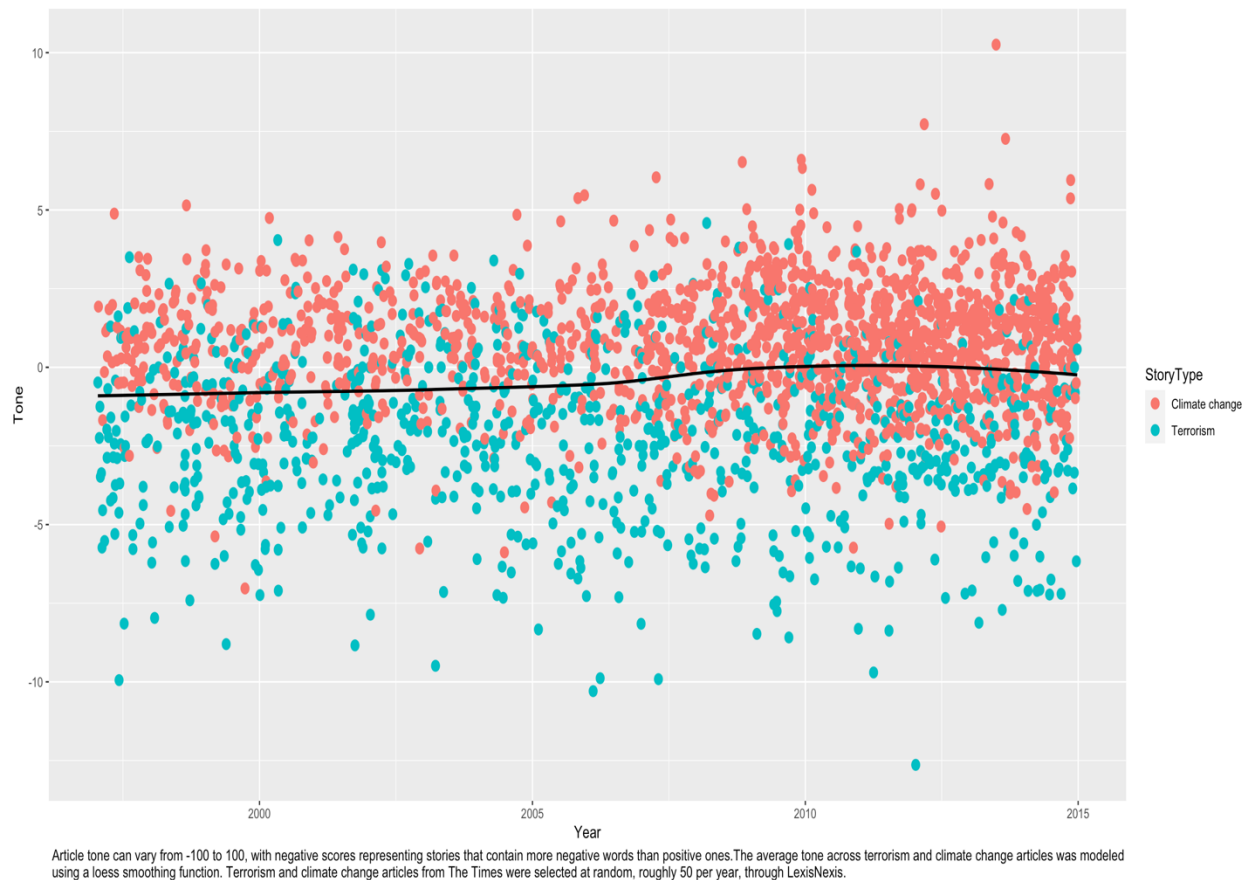
Treating terrorism as a more serious threat to national security than climate change is a form of climate denial that even Democrats practice. Between 1995 and 2016, less than one American died per day in acts of terrorism committed either in the US or abroad (Miller and Jensen 2017), while 10 to 14 people in the US died every day from anthropogenic climate change (Vicedo-Cabrera, et al. 2021). Nevertheless, since the 9/11 attacks every President has spent more on counterterrorism than on climate change mitigation.

The US public agrees with these Presidential priorities. In polls, Americans identify terrorism as one of the important issues facing the US twice as often as they say this about climate change. Americans are also more worried about being harmed by terrorists (Mueller and Stewart 2018) than by climate change (Ballew, et al. 2019).

Explanations of these misaligned risk assessments often focus on the news media (Mueller 2006). Terrorism news uses the "language of fear" (Altheide 2017), while climate change reporting depends on cautious statements by scientists (Boykoff 2008) and obscurantism by climate denialists (Boykoff and Boykoff 2004). As a result, terrorism reporting is seen as more negative and, therefore, more intimidating (Feick, et al. 2021,) than climate change reporting.

Our research on the tone of terrorism and climate change reporting confirms that terrorism is covered more negatively than climate change (see Figure One). Something foundational, however, eludes media research: The knowledge that journalists cover terrorism and climate change differently even when terrorism and climate change pose identical risks to infrastructure and people. Journalists might not be to blame for the public's misaligned attitudes about terrorism and climate change if their coverage simply reflects differences in the events that occupy the terrorism and climate change beats.

Figure 1: The tone of terrorism and climate change news in *The New York Times*, 1996-2015.

Article tone can vary from -100 to 100, with negative scores representing stories that contain more negative words than positive ones.The average tone across terrorism and climate change articles was modeled using a loess smoothing function. Terrorism and climate change articles from The Times were selected at random, roughly 50 per year, through LexisNexis.

Using a pre-registered experimental design (see https://osf.io/nam2q), we developed a protocol for examining how journalists cover situations in which terrorism and climate change represent equivalent threats. Building on Gilbert (2009), we hypothesized that reporters write more negatively about threatening situations when they believe that terrorism is at issue rather than climate change.

Between April and June of 2021, we invited journalists to participate in a study that asked them to write lead sentences about a hypothetical FEMA report detailing threats to 20% of the water supplies in the US states they worked in. The report estimated that harm to these water

supplies could rival events like the 1977 Laurel Run dam failure in Johnstown, Pennsylvania that killed 40 people and caused 5.3 million dollars of damage.

Random assignment determined whether the report identified either terrorism or climate change as the danger to US water supplies. We examined whether reporters used more negative words relative to positive ones, as a share of total words, after being told that terrorism rather than climate change threatened US water supplies. The more negative words outnumber positive words as a share of total words, the more negative the report.

We judged the negativity of the language reporters used using Lexicoder, an automated dictionary designed for political news that identifies negative and positive words in texts (Young and Soroka 2012). This variable ranges from -100 (completely negative) to 100 (completely positive) (Soroka 2012).

We recruited participants from local and national newspapers across the US. We contacted journalists at random from the largest circulating newspapers in each state and one or more randomly selected newspapers per state. We offered $5 gift cards to volunteers in exchange for their participation.

In all, 122 journalists, representing 30 states and Washington, DC, completed our study. We stopped recruiting participants after a "planned peek" at our data revealed significant results. (We scheduled this peek based on an a priori power analysis that assumed 80% power and a medium effect size (d=0.38). We determined the effect size using the lower bound of the 95% Confidence Interval of the mean difference negativity score ($M_{\text{Climate Change}}$ = -4.65, $SD_{\text{Climate Change}}$ = 4.68; $M_{\text{Terrorism}}$ = -10.69, $SD_{\text{Terrorism}}$ = 4.94; 95% $CI_{\text{Mean Difference}}$ = [1.81, 10.27]) in conjunction with the pooled variance (s^2_p = 23.35) based on data from a pilot study conducted between May and June 2020).

Women outnumbered men in this research, 69 to 44 (we excluded seven people from our analyses who failed to meet our inclusion criteria). Only three Republicans participated, as compared to 51 Democrats and 49 Independents. Eight volunteers listed either "other" political affiliations or none at all.

We used an independent-sample T-test to examine differences in the negativity of lead sentences by experimental condition. Journalists in the terrorism condition reported about the threat to the U.S. water supplies more negatively than those in the climate change condition, $t(111) = -4.50$, $p < .001$, $d = -0.84$, 95% CI: [-7.14, -2.77] and they did so by a good margin. Journalists in the terrorism condition ($M = -11.92$, $SD = 5.47$) wrote sentences that were 1.7 times more negative than journalists who were in the climate change condition ($M = -6.96$, $SD = 6.24$).

We controlled for potentially confounding relationships using regression. Self-identified Democrats ($\beta = -0.10$, $t(101) = -1.04$, $p > .1$) were as susceptible to writing more negatively about terrorism than climate change as reporters who self-identified as either Independents or Republicans. Furthermore, the relative negativity of terrorism reporting ($\beta = 0.40$, $t(101) = 4.18$, $p < .001$) persists across gender ($\beta = 0.03$, $t(101) = 0.75$, $p > .1$), and years of experience working as a journalist ($\beta = -0.10$, $t(101) = -1.04$, $p > .1$).

We found no evidence that journalists who worked for newspapers owned by publicly traded companies were either more or less inclined to write more negatively about terrorism than climate change than the journalists who worked for other news organizations. We also found no evidence that the level of concern journalists expressed about terrorism and climate change influenced how they wrote about these threats. Exploratory analyses we conducted (see Hayes, 2012) show that neither journalists' concerns about climate change, nor their concerns about terrorism moderated their writing (see the appendix for all these analyses).

These results, which echo findings we got in an exploratory study we conducted with journalists in 2017 (see appendix for details), imply that differences in the tone of terrorism coverage relative to climate change coverage even when the details of terrorism and climate change events are the same. Indeed, swapping the words "terrorism" and "climate change" was all it took to get journalists to write about the news differently.

This inclination to write about terrorism more negatively than climate change cuts across political, professional, and demographic lines. Democrats, those more concerned about climate change, more experienced reporters, women, and reporters who work for publicly traded newspapers were just as inclined to use more negative language about terrorism than about climate change than everyone else in our study.

The word terrorism is a stronger trigger of negative reporting than climate change. This might reflect evolutionary responses to terroristic threats, myths surrounding terrorism and climate change, or even the business of news. Whatever the answer, getting reporters to convey terrorism and climate change risks accurately is not simply about either getting Republican reporters to believe climate science or altering journalistic practices. Instead, changing the relative tenor of the information people receive about terrorism and climate change depends on reorienting Americans to the dangers terrorism and climate change actually pose.

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