

Chapter 3

Goodbye, Miami? Reporting Climate Change as a Local Story

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In a time of accelerating climate change, news coverage of impacts has special urgency for communities already experiencing effects of changing weather patterns, increased frequency and intensity of storms, rising seas and increasing temperatures. Mass media play critical roles in public identification, understanding and interpretation of issues, and this is particularly true for environmental and scientific affairs (e.g., [Boykoff, 2011](#); [Schoenfeld, Meier, & Griffin, 1979](#); [Trumbo, 1996](#); [Wilson, 2000b](#)). How news stories regarding climate change are constructed and presented within these arenas of mediated debate have significant implications for policy outcomes, as media, public and political agendas interface in fluid and transformative ways over time.

Previous research has characterized journalism related to climate change as concerning events that are distant in time and place ([Gibson, Craig, Harper, & Alpert, 2016](#); [Shanahan & Morgan, 1999](#); [Wilson, 2000b](#)). However, audiences in various locales are increasingly experiencing impacts of climate change first-hand. This study examines a case study of local news coverage of climate change that appeared in *The Miami Herald* (heretofore referred to as *The Herald*), the largest newspaper in South Florida by circulation ([Cision.com, 2016](#)). It has a total reach of 1 million, which includes editions in Latin America and the Caribbean ([MH Media, 2018](#)). Miami is often referred to by national media outlets as “ground zero” of climate change in the United States ([Kolbert, 2015](#)), as it is simultaneously vulnerable to the impacts of rising seas, with its low elevations and porous limestone bedrock, and also has the most economic assets at risk in the country. Rising seas could threaten an estimated \$14 billion of South Florida real estate by 2060 (Southeast Florida Climate Compact, 2015), and have already had an impact on prices of dwellings situated at lower elevations within Miami-Dade County ([Keenan, Hill, & Gumber, 2018](#)); issues regarding urban change and development related to climate change impacts such as sea level rise are ongoing ([Shumow & Gutsche, 2016](#)). Miami’s residents must navigate flooded

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streets during the highest high tides of the year (dubbed “King Tides,” these days most often occur during the Fall), which coincide with local flooding due, in part, to increased sea level rise.

By focusing on a case study of regional news coverage, we provide an important and often overlooked lens into local news coverage of global phenomenon and implications for “glocal” understandings of audience awareness and reaction. Citizen consumption of local news has been seen as both a driver of citizen engagement in local communities and driven by citizen engagement (Hoffman & Eveland, 2010; Janowitz, 1967; Stamm, Emig, & Hesse, 1997), particularly in times of perceived community risk (Griffin, Dunwoody, & Neuwirth, 1999; Griffin, Neuwirth, Dunwoody, & Giese, 2004; Watson & Cavanah, 2015). Through content analysis, this study examines coverage of climate change in *The Herald* to investigate patterns of covering the impacts of climate change as a local story. We find that news coverage in *The Herald*, the dominant mainstream newspaper in South Florida, was event-driven, locally focused and presented through opinion and editorial pieces more often than news. *The Herald* coverage linked distant hypotheses of climate change with local realities, invoked a network of editorial responses, and emphasized local impacts, particularly in more affluent areas. Findings from this study contribute to understanding how news coverage of climate change as a local story may provide a useful model for engaging the public in adapting to and mitigating against the impact of climate change, and creating social acceptance of climate change policy.

Miami as Ground Zero for Sea Level Rise

This study seeks to understand local media coverage of ongoing climate change impacts that threaten human viability in South Florida. Miami is an important case study to understanding media coverage of climate change and its impacts, as it is an area particularly prone to sea level rise, flooding from intensifying storms, and increasing heat. South Florida’s sea levels rose 9 inches during the twentieth century – with sea level rise accelerating in the latter part of the century – and regional models project seas to rise anywhere from 3 to 6 feet during the twenty-first century (Southeast Florida Climate Compact, 2015). With one foot predicted sometime between 2030 and 2060, such a rise would have severe impacts on South Florida’s coasts, inland areas, infrastructure, and drinking water supplies, among other serious concerns.

Local media provide an important lens through which to observe mediated articulations of sea level rise, and implications for community engagement. Local journalism has been found to emphasize affluent communities and the interests of local businesses over less-advantaged locations (Barnhurst, 2016; Gerbner, Gross, & Signorielli, 1976; Howe, 2009; Shapiro, 1999). Local news is seen as both a driver of community engagement and a symptom of it, particularly among more affluent communities (Hoffman & Eveland, 2010; Janowitz, 1967; Stamm et al., 1997). Civic engagement has also been found to be higher in communities where there is a perception of risk (Griffin et al., 1999, 2004; Watson & Cavanah, 2015), which may include environmental risk (Friedland, Napoli, Ognyanova, Weil, & Wilson, 2012; Watson & Cavanah, 2015). However, by excluding citizen voices in favor

of those of official, local media coverage of environmental events has also been criticized as potentially reducing engagement, particularly with younger people (Gutsche, Jacobson, Pinto, & Michel, 2017).

Flooding in Miami Beach due to sea level rise has increased, and greater numbers of Floridians are observing this flooding, 33.5% in a 2016 survey, compared to 23% in 2015, which perhaps explains why the same survey found that 81.3% of Floridians were very concerned or somewhat concerned about climate change (St. Leo University Polling Institute, 2016; Wdowinski, Bray, Kirtman, & Zhaohua, 2016).

These facts led us to hypothesize that, while coverage of sea level rise in the United States is characterized by warning about future events occurring far away, *The Herald* will be engaged in covering local impacts of climate change:

H1. Most *Herald* coverage will report climate change as a local story.

Defining Miami

In a study of changing approaches to newspaper coverage from the early twentieth century to the present day, Barnhurst (2016) found that definition of “local” news has evolved over time. While most journalism organizations, newsrooms, journalism educators and researchers maintain that local news is the core of journalism practice, the definition of local has morphed from physical places to digital “spaces” where “the trend [is leading] away from smaller locations. The geographic domain of general news [is becoming] wider” as local addresses are vanishing from local reporting (pp. 157–158).

“Miami” is an area of uncertain geographic boundaries, as the term arguably first brings to mind the oceanfront of the City of Miami Beach, a different domain from the City of Miami, which is bounded by the waters of Biscayne Bay (Shumow & Gutsche, 2016). “Miami” could be thought of as the entirety of Miami-Dade County, which extends from the City of Homestead, just north of the Florida Keys, to the City of Aventura, just south of Broward County, and the Everglades National Park to the west. The citizens of Dade County chose to rename the area Miami-Dade County in 1997 as part of a marketing strategy to associate the entire region with its most famous locations, made more appealing in part due to the success of the TV show *Miami Vice* (Rivero, 2013; Viglucci, 2014). At the same time, Miami is an international city, one of the largest in the United States, and often referred to as the “Gateway to the Americas,” or the “unofficial capital of Latin America” (Davies, 2015) as capital, populations, and economies flow through Miami from Latin America, the Caribbean and beyond. *The Herald* is the leading paper in terms of readership in Miami-Dade County (Cision.com, 2016), and the paper’s management considers itself a regional news organization (Hare, 2016). In this chapter, we will define “Miami” as consisting of the totality of Miami-Dade County. Therefore, we ask the following research question:

RQ1. Within the scope of local news, how specific is geographic location in *The Herald’s* local coverage of climate change?

Climate Change Journalism as a Social and Cultural Construction

Published news content is a social and cultural construction that reflects the influences within newsrooms, news organizations, and media systems, as well as individual perceptions of issues and audiences (e.g., Bennett, 1982; Gans, 1979; Gutsche & Shumow, 2017; Molotch & Lester, 1974; Tuchman, 1978). Scholars argue that news regarding environmental issues is also shaped by internal struggles and processes, such as individual motivations and schematic frameworks; organizational constraints such as deadline pressures, an over-reliance on official sources and other variables that impact what gets into the news and how it is told; and external institutional and systematic pressures as well, as powerful and non-powerful actors vie to gain access to mediated spheres, shape and dominate the narratives and frames, to silence or amplify competing voices (e.g., Anderson, 2009; Boykoff, 2011; Carvalho, 2007; Hansen, 1991; Lester, 2010; Lester & Hutchins, 2013; Pompper, 2004).

News related to climate change faces particular difficulties to gaining traction in twenty-first century media industries. Often abstract, largely invisible or incremental, climate change processes can be overwhelming and therefore off-putting for audiences. News coverage of climate change “transcends our immediate experience” (Gibson et al., 2016, p. 418), as most Americans are familiar with climate change and its effects, including sea level rise, based on what they read about it in the media (Shanahan & Morgan, 1999; Wilson, 2000a).

[C]limate change violates almost all of the traditional definitions of newsworthiness. Climate change is global, not local. It is chronic and slow-moving, not episodic or event-driven. As an issue, it is neither dramatic nor does it have an immediately obvious human face. (Gibson et al., 2016, p. 428)

Stark commercial pressures mean audience interest and attention can drive editorial agendas, and shrinking newsrooms have also meant loss of professionals to adequately cover every beat.

Presentation of information matters. Some have argued the emphasis in climate change reporting has been on mitigation, or actions society can take to stop the forces enhancing climate change, rather than adaptation, or actions society can take to learn to live with already-present effects of climate change (Anderson, 2009). Furthermore, Boykoff and Boykoff (2007) found that the US coverage of climate change that accurately embraces the “scientific language of uncertainty” (p. 1192) has the unintended consequence of removing the elements of excitement and drama from climate reporting, making the story of climate change even more abstract and less accessible to average citizens.

Politicization of the topic has also had impacts on public opinion: A poll in 2016 showed that while many Americans think the climate is changing, only 27% believed that the cause was human activity (Cama, 2016). And the number of

those who find it concerning has declined dramatically since 2008 (Scruggs & Benegal, 2012). Brulle, Carmichael, and Jenkins (2012) found that audience concern toward climate change was largely a factor of elite cues and structural economic factors; these same factors also had the largest effect on media coverage of climate change.

Much expert reporting on climate change takes place in online publications like *Climate Central* and *Climate Wire*, which are written for niche audiences (Gibson et al., 2016). Despite early optimism that the Internet would become a field for open debate (Barlow, 1996; Gillmor, 2004; Negroponte, 1996), online audiences have become increasingly insular echo chambers (Jacobson, Myung, & Johnson, 2016; Shirky, 2003; Sunstein, 2009). Therefore, audiences unaware of climate change issues or those who are so-called “deniers” or “skeptics” are unlikely to be exposed to this content, or may choose to actively ignore it (Ganguly & Tasoff, 2014). Public attitudes toward issues like climate change may also be shaped by their political orientation, with conservatives more likely to be skeptical of the claims of climate scientists than liberals (Funk & Kennedy, 2016).

In recent years, climate change has become a politically controversial subject, although most of the scientific consensus is that the earth is warming because of human activities that contribute greenhouse gases to the atmosphere (NASA, 2016). However, US norms of news reporting compel journalists to try to balance their stories by presenting all points of view, particularly with controversial stories. This proved problematic when covering climate change, as even when the science overwhelmingly showed that the earth was warming due to human activity, so-called groups of climate deniers were given equal standing in news stories (Antilla, 2005; Boykoff & Boykoff, 2004). Part of this coverage was influenced by actors within the American federal government who edited climate reports to challenge the link between fossil fuels and climate change (Monbiot, 2006; Revkin, 2005a) and corporations that funded research to raise questions about the science of climate change (Anderson, 2009). More recently some scholars have found that journalists have become less likely to promote the false equivalency of two sides, and simply present climate change as a scientific fact (Boykoff, 2011; Gibson et al., 2016; Olausson, 2009; Ward, 2008). However, others note that substantial media attention is still given to climate change contrarians, but in a critical interpretive context, as journalists seek to interpret their claims through a lens of the scientific climate change consensus (Brüggemann & Engesser, 2017).

A further complication for climate change news is the competitive environment for news selection, as editors, producers, and publishers decide what goes into the issue or newscast. As competing events happen, or stories deemed to be more commercially viable are presented, climate change news may be “crowded out” (Barkemeyer et al., 2017, p. 18). Studies examining climate change news in comparative context have cited gatekeepers’ perceptions of health, immigration, unemployment, security and terrorism to be more important to their audiences than environmental news (Anderson, 2009; Takahashi, Pinto, Vigon, & Chavez, 2015).

RQ2. Given the factors that shape the reporting of climate change, which categories of news, and how frequently are climate change stories reported in *The Herald*?

RQ2a. In which news categories do stories about climate change appear in *The Herald*?

RQ2b. How does climate coverage change over time?

Climate Change Reporting and the Tyranny of the News Peg

The frequency and timing of environmental news has implications for public opinion and policy outcome. Research has shown that outside of immediate crises such as oil spills or weather events like flooding or storms, climate change as an issue has on the aggregate received comparatively little attention from US media (Ford & King, 2015; Pinto & Vigon, 2014; Zamith, Pinto, & Villar, 2013), including US Spanish-language media (Takahashi et al., 2015; Villar & Pinto, 2013). By comparison, Schmidt, Ivanova, and Schafer (2013) found that media from countries under pressure from carbon obligations to the Kyoto Protocol had high issue attention to climate change.

Journalists need a “peg” on which to hang their stories, which are only news if they present something new, a routine which has implications for news related to climate change (Boykoff, 2011; Dean, 2009). Revkin (2005b, p. 222) discussed the idea of the “tyranny of the news peg,” which he has described as “a fundamental impediment” to environmental coverage: “Science is a slow, grinding process, but news is something sudden. The tyranny of ‘the peg’ – something to hang a story on – is the first impediment” (Revkin as quoted in Romanesco, 2003). “A fundamental impediment to coverage of today’s top environmental issues is the nature of news. News is almost always something that happens that makes the world different today,” Revkin (2010) writes. Therefore, we ask:

RQ3. To what extent, if any, is *Herald* coverage of climate change reliant on “news pegs” (Revkin, 2005b)? What kind of pegs drive coverage?

Method

To select stories to include in this study, we searched the Newsbank Access World News database, which contains stories from *The Herald* going back to 1982, searching for the interrelated terms “sea level rise” OR “global warming” OR “climate change.” We later included “flood” as one of the search terms, even though it returned many false positive stories that were not related to climate change or even weather phenomenon (e.g., “a flood of applicants”), because it became apparent that some stories about coastal flooding that were likely related to climate change did not mention any of the other terms.

We focused our analysis on the years 2011–2015, a time period important as there was considerable attention directed toward more frequent and severe periods of flooding on city street. The search initially returned 1,772 stories. After eliminating stories unrelated to the topic of climate change that contained these terms, and duplicate entries of the same story, 493 stories remained.

We conducted a content analysis that identified date of publication, author, headline, news category, geographic scope, and presence of search keywords. We also assigned a rank from 1 to 3 for each story, with 3 indicating that climate change was a central topic to the story, and 1 indicating that the search terms were only marginally related to the story topic. For example, “Rising Seas, Falling Real Estate Values,” a 2013 story about a report issued by the Southeast Florida Climate Change Compact that estimated real estate losses South Florida could suffer from sea level rise, was rated a 3, and “Coral Gables approves Budget, Tax Rate for 2015–16 Fiscal Year,” a story that included “risk assessment of sea level rise” in a list of budget items approved by the city government, without further explanation, was rated a 1. Fifty-nine stories were rated 1; 251 stories were rated 2; and 167 stories rated 3.

After reviewing the stories, we decided to limit our analysis to the 167 stories with a significance rating of 3, as they would provide the clearest information about how *The Herald* covered stories of sea level rise and climate change. Overall, “climate change” and “sea level rise” were the most common search terms that turned up in climate change stories, but the numbers of both increased each year. “Global warming” was initially as popular as “climate change” and “sea level rise,” but declined in 2013 and 2014, and was well behind the others in 2015 (see Fig. 1).

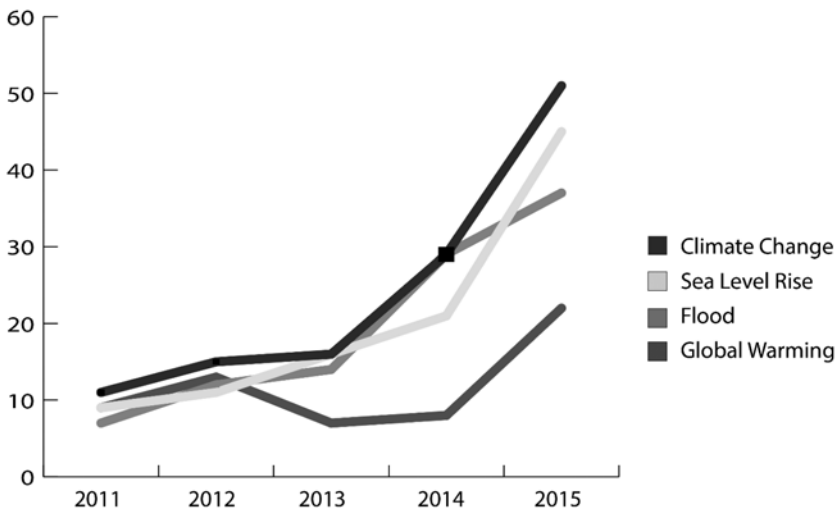


Fig. 1. Search Terms by Year.

Geographic Scope and Specificity of Climate Coverage

In *H1*, we predict that *The Herald* would cover climate change as a local story. To evaluate the geographic scope of each story, we coded it as local, national, international, or mixed. In *RQ1* we ask what the geographic specificity of local coverage would indicate, and coded local stories as containing one of the following: address, landmark, intersection, street, neighborhood, park, city, county, region state.

News Categories and Timing of Coverage

In *RQ2*, we investigate the news categories and timing and frequency of news coverage of *The Herald's* climate coverage. We coded for news categories, which include news and analysis, opinion, letters to the editor, feature stories, weather, listings, and interviews. We also coded for the frequency and timing of publication of climate stories to better understand whether there is a temporal pattern to climate coverage.

The Use of News Pegs

RQ3 asked to what extent climate stories in *The Herald* relied on news pegs in their coverage of climate change. Previous research indicates that climate journalism requires a “news peg,” an event or occurrence that creates a new angle for climate change coverage, and motivates editors and reporters to cover the story (Dean, 2009; Revkin, 2005b). News pegs may include the publication of a report, a political debate or an item published on the agenda of a local government meeting.

We coded the stories for the presence of a “news peg.” We employed a grounded theory approach to the analysis, generating the list of news pegs inductively, “by which themes and categories emerge from the data through the researcher’s careful examination and constant comparison” (Zhang & Wildemuth, 2009, p. 305). Researchers first coded whether there seemed to be a news peg associated with a story, and then assigned a category to the news peg (see Fig. 5 for a list of news pegs by year).

Reliability

A codebook was created for the news categories, news pegs and geographic scope, and tested for inter-coder reliability. A graduate student coded most of the articles, then a faculty member re-coded 25 of the 167 articles examined in this study, for a 14.97% overlap, achieving 88–100% agreement, with Krippendorff’s Alpha scores of 0.872 for news categories, 0.857 for news pegs and 1 for geographic scope.

Results

H1, which posited that *The Herald* would cover climate change as a local story, was supported. In all, 77.5% of the 167 stories we analyzed were regional stories. The scope of 8.28% of the stories was coded as national and/or international, and

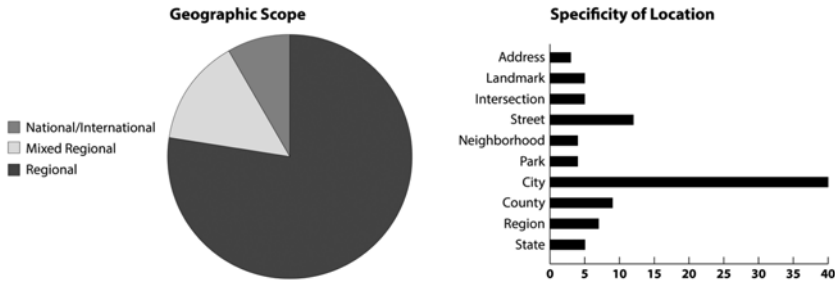


Fig. 2. Geographic Scope and Specificity of Location in Climate Change Stories Published in *The Herald*, 2011–2015, by Percentage. Mixed Regional Includes Stories with International or National Range.

14.2% stories were coded as combined regional and national and/or international in scope (see Fig. 2).

In accordance with Barnhurst’s findings, local addresses were present in only 2.7% of the stories, the lowest percentage of any geographic range. A plurality of the local stories, 40% were reported at the specificity level of a municipality. In total, 34.8% of the stories included a location description below the city level: address, landmark, intersection, street, neighborhood, park. In total, 24.9% of the stories included a location description above the city level: county, region, and state (see Fig. 1). Addresses, intersections, neighborhoods, and streets within the City of Miami Beach made up the overwhelming majority of locations at the city level or below, reflecting an abundance of coverage in *The Herald’s* most affluent community.

Many of *The Herald’s* stories included more than one location or more than one level of geographic specificity. We coded for the most “local” level of geographic specificity. Many of the stories included a non-specific reference to “Miami,” which could have been interpreted to be the City of Miami, Miami-Dade County or South Florida in general, but they all included more specific geographic references. We coded for the most specific geographic references.

News Categories and Timing of Coverage

Stories that fell into the category of “news and analysis” were the most frequently occurring stories each year, followed by “opinion” and “letters.” Initially we combined opinion and letters, but separated these categories because stories categorized as opinion were written by *The Herald’s* reporters who covered climate change, or by invited experts. Letters were written by citizens, and were not solicited by *The Herald*. When combined together, opinion and letters outnumber news and analysis every year (see Fig. 3).

The Herald increased the number of stories it published about climate change from 13 in 2011 to 64 in 2015. During each of the five years, stories peaked during the annual King Tides roughly around the month of October, when the highest high tides of the year cause flooding on Miami Streets, particularly in Miami Beach (see Fig. 4).

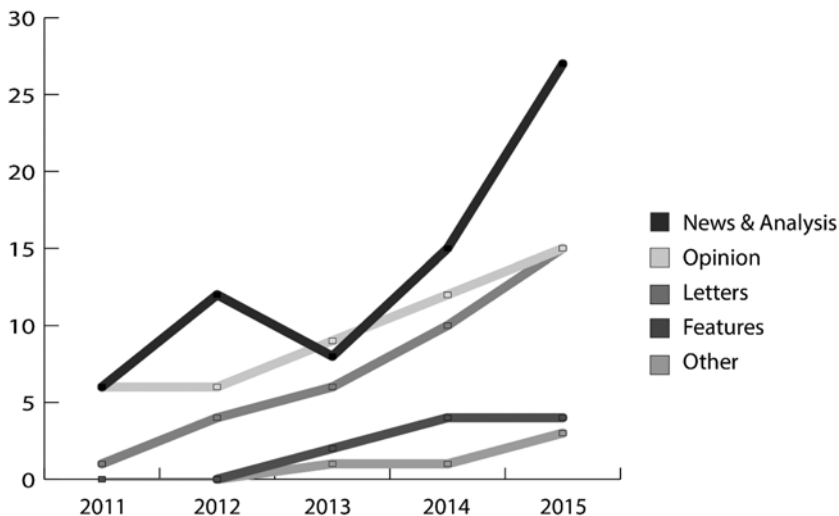


Fig. 3. Editorial Categories by Year. Other Includes Weather, Listings, and Interviews.

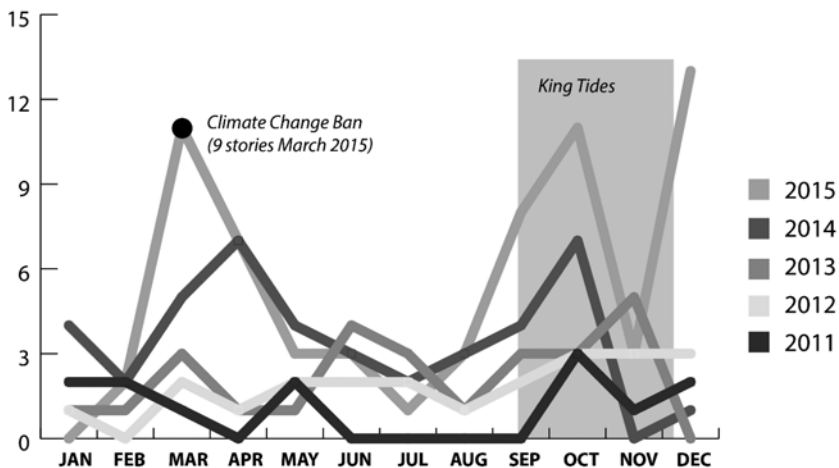


Fig. 4. Number of Articles Published by Month, 2011–2015. Mid-September–Early December Is Generally a Period of Increased Flooding.

Use of News Pegs

We found that 90.4% of Herald stories were driven by a news peg, an event or an occurrence that creates a fresh angle to a news story. We collapsed the news pegs that seemed to drive *Herald* reporting into 11 categories. Reports (including published studies and polls) and meetings (including conferences and government business meetings) drove several articles every year, but the specific reports and meetings varied from year to year. For example, in 2011 *The Herald* published

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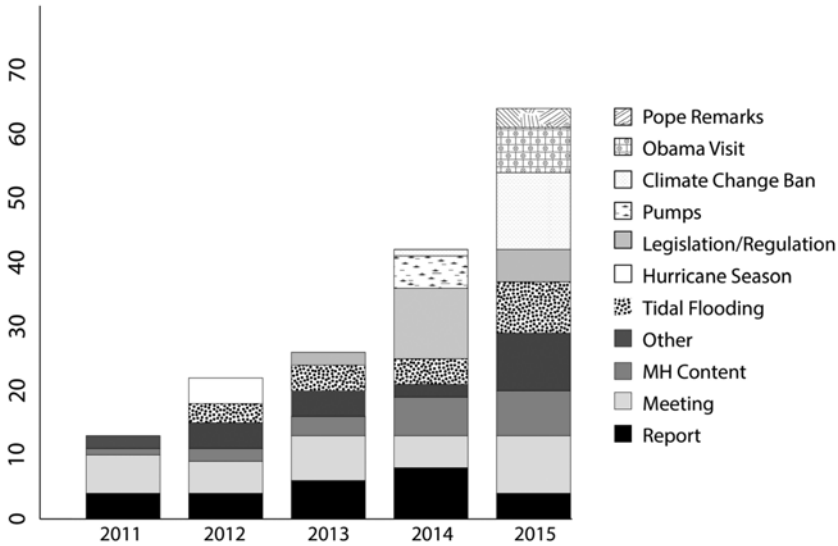


Fig. 5. News Pegs Driving Herald Stories on Sea Level Rise, 2011–2015. “MH Content” Refers to Stories or Letters Written in Reaction to an Article or Letter Published in *The Herald*.

three articles related to the release of reports or studies, including an Intergovernmental Panel on Climate Change (IPCC) report on extreme weather and a Florida Atlantic University report on the economic consequences of global warming. In 2014 there were five articles driven by reports, including a local sea level rise task force report and a report by the Union of Concerned Scientists about the impact of flooding on coastal communities, including those in South Florida. Every year, beginning 2012, the number of stories about coastal flooding peaked around the month of October when the highest high tides bring flooding to areas of South Florida (see Fig. 5 for news pegs by year).

Discussion

Distant Hypotheses, Local Realities Spur Coverage

Between 2011 and 2015, *The Herald* increased its coverage of climate change and maintained its commitment to serving its local audience, as those communities began to be increasingly directly impacted by climate change, particularly sea level rise. Such a change points to the importance of public perception of risk in polarized discussions, as others have noted:

[I]ncreasing knowledge alone is unlikely to overcome the political divide around climate change, whereas increasing risk perceptions may dampen political polarization and lead to greater policy support across the political spectrum. (Hart, Nisbet, & Myers, 2015, p. 541)

Even as discussion of climate change was almost entirely absent from Florida's state political leaders' dialogues, *The Herald's* coverage of climate change and its impacts increased more than fourfold in just four years, a trend that is the opposite of what others have found (Brulle et al., 2012). In fact, the cues driving this media coverage were mostly local voices with local/regional perspectives, as these were the audiences most directly impacted by sea level rise and increasingly becoming aware of the significance for their homes and livelihoods. News pegs included release of reports and meetings, but also events such as tidal or storm flooding, demonstrations and events by local NGOs and community groups, as well as reactions to national and international media coverage that largely painted Miami and South Florida as eventually lost to sea level rise.

Events spurring coverage of climate change scaled from local issues to global events, and became networked content linkages that ranged from response to interpretation. International conferences, publications like the IPCC reports, and federal legislation provided news pegs for *The Herald* to cover the subject, to which *Herald* reporters added a local angle. For example, in 2012 the non-profit research group Climate Central published a report called "Surging Seas," which analyzed the risk of coastal areas in the United States to sea level rise and climate change. The headline in *The Herald* read: "Florida at Highest Risk for Flooding from Sea Level Rise, Report Finds." While initially reactive, increasing local flooding and other locally occurring events allowed the news organization to link global and national news about the region to local experiential and observational instances.

Local coverage did take hard news forms, with very pragmatic angles that supported portions of the indexing hypothesis as news coverage struggled to explain what was happening on the ground to audiences experiencing unescapable realities. Some coverage motivated by local events included links to larger issues of climate change. For example, an October 2015 story describes higher-than-expected King Tide flooding on Miami Beach: "Once again, sunny-day flooding made the coastal community an example of the problems with sea-level rise caused by climate change." But other stories about local flooding did not include a link to the larger issues of climate change. For example, an October 2013 story warning Miami Beach residents about upcoming flooding attributed the cause to an "astronomical phenomenon" that creates higher than usual high tides.

A Network of Content

The Herald published stories on sea level rise and climate change in a social and political environment that was not neutral in its reception of these topics. For example, in March 2015, The Florida Center for Investigative Reporting revealed that Florida Governor Rick Scott had instituted a policy to ban the phrase "climate change" from state agency communications. The climate change ban story generated 12 stories in *The Herald* during the month of March 2015, the highest number of climate-change stories at once during the period that we covered. The editorial content ranged from straight news ("In Florida, Officials Ban Term 'Climate Change,'" March 8) to opinion pieces ("State has another Florida-DUH Moment," March 16), to letters to the editor ("Killing 'Climate Change,'"

March 11) to humor (“Carl Hiaasen: Scott’s ‘Creative Editing’ Deftly Deletes ‘Climate Change,’” March 13). Such a peg once again provides support for the widely documented indexing hypothesis, arguing that elite action and debate spurs provides outlines for mediated interpretation, and also that citizen voices were not allowed access to the degree official ones were, with implications for community engagement (Gutsche et al., 2017).

The most frequently occurring editorial category was a combination of opinion/editorial and letters to the editor. Interestingly, many of the opinion pieces reacted to external, largely pessimistic, news coverage from international and national outlets about Miami and sea level rise. In a few instances, a *Herald* news story would motivate the publication of one or more opinion pieces as an extension of the news coverage, which would, in turn, generate letters to the editor written by citizens. For example, *Rolling Stone* magazine published its famous “Goodbye Miami” article in June 2013. The *Herald* covered the article as news in a story on June 20, 2013 (“Rolling Stone Warns that Miami Will Be Underwater”), followed by an editorial on June 22 that criticized Florida government officials for inaction on sea level rise (“Rising Seas? Geezer Pols Will Be Dead by Then”), followed by a citizen letter on June 29 that questioned climate change (“Climate Change Hoax”) and another on July 18 written in support of government action (“Staying Above Water”).

In January 2014, *The Herald* wrote a story about a local Congressman seeking to amend federal legislation that would increase flood insurance for many South Florida residents (“Rep. Joe Garcia Offers Proposal as Congress Continues to Grapple with Flood Insurance”), which was followed by an editorial in support of these changes (“Fred Grimm: A Call for Fair Rates on Flood Insurance”), and a citizen letter opposing these changes (“Don’t Encourage Risky Development”).

Coverage that predominantly paints climate change impacts as an opinion, rather than hard news fact, may unintentionally buttress the false claims of climate science deniers, or those who focus on emphasizing the uncertainty in the scientific process as a means to strategically downplay and negate scientific consensus on climate change (Antilla, 2005; Carvalho, 2007). At the same time, it represents a strong institutional endorsement of the issue as significant and impactful for local communities, and a platform for the news organization’s call to action for elected officials to take action to ameliorate the impacts for local communities.

The Tyranny of Local Impacts

Many of the stories were about the physical impact of sea level rise on local communities, which included references to high tides; the installation of pumps to take water off the street in Miami Beach; Everglades restoration and related efforts; climate change impacts on sewer systems, water management, and temperature. Other stories included themes related to political and social infrastructure, such as climate change denial, carbon emissions, real estate, insurance, and politics. These interpretive functions at the local level provided important depth to the impact and immediacy angles so important to public awareness and interest in a mediated topic.

Tidal flooding during King Tides was the most frequently occurring climate change story, accounting for the news peg in 17 stories. Discussion of tidal flooding in Miami Dade County was absent in 2011, although one news story, about the South Florida four-county climate change compact, mentioned “regular flooding” on a street in Monroe County despite local climate change. The first 2012 story to address sea level rise and flooding in Miami during the King Tides was an opinion piece by a local citizen known for his environmental work, who provides an example of how many citizens misinterpret flooding in the streets:

Driving around Miami Beach during Sunday’s high tide, shooting video and surveying the flooding, I was shocked by people’s reaction to the calf-deep water they were walking in. Their response to my question, “Why is the water so high?” was, “It must be a broken water pipe.” Upon being told that global warming was the cause and sea level rise the culprit, they seemed incredulous.

However, breaking from the grip of elite discussion dictating media coverage, even in the face of silence from state and federal leaders, the number of stories related to tidal flooding increased after 2012. Local officials began to discuss sea level rise, particularly when king tides overtopped seawalls and bubbled up through storm drains. As mentioned previously, an October 2013 article reports on King Tide flooding (“Rain Or No Rain, Beachfront Streets Flood Due to ‘Spring Tide’,” October 17), and a couple of weeks later a weather story warned citizens: “South Florida Can Expect High Tides, Flooding with New Moon” (November 1). In 2014, Miami Beach began installing the first phases of its \$400 million project to pump water off of the streets, leading to a series of headlines about the project’s implementation and impact (“Miami Beach Streets Stay Dry during King Tide Peak,” October 9). In 2015 there was more coverage of flooding, but mostly focused on Miami Beach (“Tides Cause Flooding in Miami Beach Again Friday Morning,” October 9, and “Miami Beach’s Battle to Stem Rising Tides,” October 23).

The Definition of “Miami”

While *The Herald* does invoke the geographic term “Miami” in an imprecise manner in some of its stories, it also includes more specific locations in its coverage, such as Miami Beach, Miami-Dade County and the City of Miami. As Barnhurst predicted, few (2.7%) of *The Herald*’s stories included specific street addresses, and when street addresses, landmarks intersections, the most specific locations, were included, they were likely to be located within the City of Miami Beach.

The affluent City of Miami Beach received the most coverage, particularly coverage related to coastal flooding during the highest high tides and the unprecedented investment the city made in infrastructure to pump water off the street. Other parts of South Florida also regularly flood during this period, including some low-lying areas further from the coast, but impacts on those areas went largely unreported during this period. It remains to be seen whether coverage of lower-profile and lower-income areas will increase as time goes by and the impact of climate change becomes more dramatic on all areas of South Florida.

Conclusions

Case studies of regional and local news coverage can provide important insight to how local impacts of global phenomena such as climate change are translated for audiences. *The Herald's* coverage of sea level rise represents a lens to how experiences locally supersede silence by state and national officials, as journalists and editors communicate the issues in other ways to their audiences. *The Herald* largely covered climate change as a local story between 2011 and 2015, focusing on the affluent area of Miami Beach, or large areas like Miami-Dade County. Most of the stories relied on news pegs that emphasized local impacts of climate change, particularly as manifested by flooding from sea level rise, therefore focusing much more on adaptation strategies, rather than mitigation. Stories that included a national, international, or speculative angle almost always included a link to local impacts or the actions of local elites, such as government sea level rise task forces. Some stories created a network of responses from reporters, opinion writers, and letter-writing citizens.

The Herald published stories on sea level rise and climate change in a social and political environment that was not neutral in its reception of these topics. Under these circumstances. *The Herald's* decision to let coverage of national and international climate change events and concrete local events related to tidal flooding drive its coverage of climate change is understandable. It also may represent the case of a newspaper directly responding to audience concerns over increased street flooding, dire international news predictions, increasing flood insurance costs, and discussion of the viability of 30-year mortgages in a region where the economy is largely driven by real estate and tourism industries.

The Herald's example of using local occurrences and infusing national and international stories of climate change with local angles may be a good model for other news organizations seeking to increase their coverage of climate change and raising their audience's awareness of climate change. By robustly displaying its affinity with the scientific consensus on climate change, as well as its understanding of the issue as an extremely salient and impactful one for local communities, *The Herald* provided an important public service to its audience. However, it can also be argued that by presenting the issue largely in opinion spaces rather than as news content, the newspaper is at risk of feeding perceptions of climate change as uncertain, unsettled or controversial rather than hard factual news. Although opinions expressed may be articulating very strongly the need for increased political will toward preparing South Florida to be resilient in the face of rising seas, it is couched as just that: an opinion and not actual news. And the focus on adapting to rising seas, rather than providing sustained news coverage of mitigation efforts that might slow down the rise, also is problematic, as potential "solutions" are largely left undiscussed. Therefore, the perception of climate change and sea level rise as urgent, impactful, and newsworthy simply is not at strong.

This study was largely exploratory, and was limited to a single media outlet, although *The Herald* is recognized as the leading news organization in South Florida. Future research would do well to incorporate audience analysis and data from content producers to more fully understand how and why news on climate change was constructed and published. However, the case study of regional South

Florida media coverage regarding climate change impacts in an area already experiencing sharp increases in instances of tidal flooding and infrastructure failure provides an important lens to understanding the influences on news content, as well as provides important baselines for understanding public and policy response.

References

- Anderson, A. (2009). Media, politics and climate change: Towards a new research agenda. *Sociology Compass*, 3(2), 166–182. <http://doi.org/10.1111/j.1751-9020.2008.00188.x>
- Antilla, L. (2005). Climate of scepticism: US newspaper coverage of the science of climate change. *Global Environmental Change*, 15(4), 338–352. <http://doi.org/10.1016/j.gloenvcha.2005.08.003>
- Barkemeyer, R., Figge, F., Hoepner, A., Holt, D., Kraak, J. M., & Yu, P. S. (2017). Media coverage of climate change: An international comparison. *Environment and Planning C: Politics and Space*, 35(6), 1029–1054. <https://doi.org/10.1177/0263774X16680818>
- Barlow, J. P. (1996). Declaration of the independence of cyberspace. Retrieved from <https://projects.eff.org/~barlow/Declaration-Final.html>
- Barnhurst, K. (2016) The problem of modern locations in US news. *International Journal of Media & Cultural Politics*, 12(2), 151–169.
- Bennett, T. (1982). Media, “reality,” signification. In M. Gurevitch, T. Bennett, J. Curran & J. Woollacott (Eds.), *Culture, society, & the media* (pp. 287–308). London: Methuen.
- Boykoff, M. T. (2011). *Who speaks for the climate? Making sense of media reporting on climate change*. Cambridge: Cambridge University Press.
- Boykoff, M. T., & Boykoff, J. M. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change*, 14(2), 125–136.
- Boykoff, M. T., & Boykoff, J. M. (2007). Climate change and journalistic norms: A case-study of US mass-media coverage. *Geoforum*, 38(6), 1190–1204. <http://doi.org/10.1016/j.geoforum.2007.01.008>
- Brüggemann, M., & Engesser, S. (2017). Beyond false balance: How interpretive journalism shapes media coverage of climate change. *Global Environmental Change*, 42, 58–67.
- Brulle, R., Carmichael, J., & Jenkins, J. C. (2012). Shifting public opinion on climate change: An empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010. *Climatic Change*, 114(2), 169–188.
- Cama, T. (2016). Poll: 70 percent believe in climate change. The Hill, January 5. Retrieved from <http://thehill.com/policy/energy-environment/264767-poll-70-percent-believe-in-climate-change>
- Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science*, 16(2), 223–243.
- Cision.com. (2016). Top 10 Florida daily newspapers. *Cision.com*, January 27. Retrieved from <http://www.cision.com/us/2016/01/top-10-florida-daily-newspapers/>
- Davies, S. (2015). Miami: US gateway for Latin America. FT.com, February 24. Retrieved from <https://www.ft.com/content/3efed31a-b92b-11e4-98f6-00144feab7de?mhq5j=e1>. Accessed on June 16, 2017.
- Dean, C. (2009) *Am i making myself clear? A scientists' guide to talking to the public*. Cambridge, MA: Harvard University Press.
- Ford, J., & King, D. (2015). Coverage and framing of climate change adaptation in the media: A review of influential North American newspapers during 1993–2013. *Environmental Science & Policy*, 48, 137–156.
- Friedland, L., Napoli, P., Ognyanova, K., Weil, C., & Wilson, E. J. (2012). Review of the literature regarding critical information needs of the American public. Washington, DC: Federal Communication Commission. Retrieved from <https://www.fcc.gov/>

- news-events/blog/2012/07/25/review-literature-regarding-critical-information-needs-american-public
- Funk, C., & Kennedy, B. (2016, October 4). The politics of climate. Pew Research Center. Retrieved from <http://www.pewinternet.org/2016/10/04/the-politics-of-climate/>
- Ganguly, A. R., & Tasoff, J. (2014, May 28). Fantasy and dread: The demand for information and the consumption utility of the future. Claremont McKenna College Robert Day School of Economics and Finance Research Paper. Retrieved from <http://papers.ssrn.com>
- Gans, H. (1979). *Deciding what's news: A study of CBS Evening News, NBC Nightly News, Newsweek and Time*. New York, NY: Pantheon.
- Gerbner, G., Gross, L., & Signorielli, N. (1976). Living with television. *Journal of Communication*, 26(2), 172–194.
- Gibson, T. A., Craig, R. T., Harper, A. C., & Alpert, J. M. (2016). Covering global warming in dubious times: Environmental reporters in the new media ecosystem. *Journalism*, 17(4), 417–434. doi:10.1177/1464884914564845
- Gillmor, D. (2004). *We the media: Grassroots journalism by the people, for the people*. Sebastopol, CA: O'Reilly Media.
- Griffin, R. J., Dunwoody, S., & Neuwirth, J. (1999). Proposed model of the relationship of risk information seeking and processing in the development of preventative behaviors. *Environmental Research*, 80, S230–S245.
- Griffin, R. J., Neuwirth, J., Dunwoody, S., & Giese, J. (2004). Information sufficiency and risk communication. *Media Psychology*, 6, 23–61.
- Gutsche, R. E., Jr., Jacobson, S., Pinto, J., & Michel, C. (2017). Reciprocal (and reductionist?) newswork: An examination of youth involvement in creating local participatory environmental news. *Journalism Practice*, 11(1), 62–79.
- Gutsche, Jr., R. E., & Shumow, M. (2017). When local is national: An analysis of interacting journalistic communities in coverage of sea rise. *Journalism Studies*, 20(3), 442–462. doi:10.1080/1461670X.2017.1364141
- Hansen, A. (1991). The media and the social construction of the environment. *Media, Culture & Society*, 13, 443–458.
- Hare, K. (2016). The Miami Herald is getting to know its audience again. *Poynter.org*, July 11. Retrieved from <http://www.poynter.org/2016/how-the-miami-herald-is-getting-to-know-its-audience-again/414525/>
- Hart, P.S., Nisbet, E., & Myers, T. (2015). Public attention to science and political news and support for climate change mitigation. *Nature Climate Change*, 5, 541–545. doi:10.1038/nclimate2577
- Hoffman, L., & Eveland, W. (2010) Assessing causality in the relationship between community attachment and local news media use. *Mass Communication and Society*, 13, 174–195. doi:10.1080/15205430903012144
- Howe, P. D. (2009). Newsworthy spaces: The semantic geographies of local news. *Aether*, 4(Spring), 43–61.
- Jacobson, S., Myung, E., & Johnson, S. (2016). Open media or echo chamber? The use of links in audience discussions on the Facebook pages of partisan news organizations. *Information, Communication & Society*, 19(7), 875–891. doi:http://dx.doi.org/10.1080/1369118X.2015.1064461
- Janowitz, M. (1967). *The community press in an urban setting: The social elements of urbanism*. Chicago, IL: University of Chicago Press.
- Keenan, J., Hill, T., & Gumber, A. (2018). Climate gentrification: From theory to empiricism in Miami-Dade County. *Environmental Research Letters*, 13(5), 054001. Retrieved from <http://iopscience.iop.org/article/10.1088/1748-9326/aabb32>
- Kolbert, E. (2015). The Siege of Miami. *The New Yorker*, December 21 & 28. Retrieved from <http://www.newyorker.com/magazine/2015/12/21/the-siege-of-miami>

- Lester, L. (2010). *Media and environment*. Cambridge: Polity.
- Lester, L., & Hutchins, B. (Eds.). (2013). *Environmental conflict and the media*. New York, NY: Peter Lang.
- MH Media. (2018). Our reach. *Miamiheraldmedia.com*, March 8. Retrieved from <http://www.miamiheraldmedia.com/our-reach/>
- Molotch, H., & Lester, M. (1974). News as purposive behavior: On the strategic use of routine events, accidents, and scandals. *American Sociological Review*, 39(1), 101–112.
- Monbiot, G. (2006). *Heat: How to stop the planet from burning*. London: Random House.
- NASA. (2016). Scientific consensus: Earth's climate is warming. Retrieved from <http://climate.nasa.gov/scientific-consensus/>
- Negroponte, N. (1996). *Being digital*. New York, NY: Vintage.
- Olausson, U. (2009). Global warming – Global responsibility? Media frames of collective action and scientific certainty. *Public Understanding of Science*, 18(4), 421–436.
- Pinto, J., & Vigon, M. (2014). Press freedom, democracy and climate change reporting in Latin America. *Hemispheres*, 23, 24–32.
- Pompper, D. (2004). At the 20th century's close: Framing the public policy issue of environmental risk. *The Environmental Communication Yearbook*, 1, 99–134.
- Revkin, A. (2005a). Bush aide softened greenhouse gas links to global warming. *New York Times*, June 8.
- Revkin, A. (2005b). The environment. In D. Blum, M. Knudson, & R. Marantz-Henig (Eds.), *A field guide for science writers* (pp. 222–228). Cambridge: Oxford University Press.
- Revkin, A. (2010). On balance, hype, climate and the media. *The New York Times*, October 26. Retrieved from <http://dotearth.blogs.nytimes.com/2010/10/26/on-balance-hype-climate-and-the-media/>
- Rivero, D. (2013). From Miami-Dade to Broward, the case for being mindful when renaming counties. *The Miami Herald*, January 4. Retrieved from <http://wlrn.org/post/miami-dade-broward-case-being-mindful-when-renaming-counties>
- Romanesco, J. (2003). NYT's Revkin: I often have to deal with the MEGO factor. *Poynter.org*, October 22. Retrieved from <http://www.poynter.org/2003/nyts-revkin-i-often-have-to-deal-with-the-mego-factor/17587/>
- Schmidt, A., Ivanova, A., & Schafer, M. (2013). Media attention for climate change around the world: A comparative analysis of newspaper coverage in 27 countries. *Global Environmental Change*, 23(5), 1233–1248.
- Schoenfeld, A. C., Meier, R. F., & Griffin, R. J. (1979). Constructing a social problem: The press and the environment. *Social Problems*, 27, 38–61.
- Scruggs, L., & Benegal, S. (2012). Declining public concern about climate change: Can we blame the great recession? *Global Environmental Change*, 22, 505–515.
- Shanahan, J., & Morgan, M. (1999). *Television and its viewers: Cultivation theory and research*. Cambridge: Cambridge University Press.
- Shapiro, M. J. (1999). Triumphant geographies. In M. Featherstone & S. Lash (Eds.), *Spaces of culture: City, nation, world* (pp. 159–174). London: Sage.
- Shirky, C. (2003, February 10). Power laws, weblogs, and inequality. Clay Shirky's writings about the internet: Economics & culture, media & community. Retrieved from http://www.shirky.com/writings/powerlaw_weblog.html
- Shumow, M., & Gutsche, Jr., R. E. (2016). *News, neoliberalism, and Miami's fragmented urban space*. Lanham, MD: Lexington.
- Southeast Florida Climate Compact. (2015). Unified sea level rise projection: Southeast Florida. Retrieved from <http://www.southeastfloridaclimatecompact.org/wp-content/uploads/2015/10/2015-Compact-Unified-Sea-Level-Rise-Projection.pdf>
- Stamm, K. R., Emig, A. G., & Hesse, M. B. (1997). The contribution of local media to community involvement. *Journalism & Mass Communication Quarterly*, 74, 97–107.

- St. Leo University Polling Institute. (2016, April 1). Three out of four Americans register concern over global climate change. Retrieved from <http://polls.saintleo.edu/three-out-of-four-americans-register-concern-over-global-climate-change/>
- Sunstein, C. (2009). *Republic.com 2.0*. Princeton, NJ: Princeton University Press.
- Takahashi, B., Pinto, J., Vigon, M., & Chavez, M. (2015). El ambiente y las noticias: Understanding U.S. Spanish language newsrooms' coverage of environmental issues. *International Journal of Hispanic Media*, 8, 2–14.
- Trumbo, C. (1996). Constructing climate change: Claims and frames in US news coverage of an environmental issue. *Public Understanding of Science*, 5, 269–283.
- Tuchman, G. (1978). *Making news: A study in the construction of reality*. New York, NY: Free Press.
- Viglucci, A. (2014). The Vice effect: 30 Years after the show that changed Miami. *The Miami Herald*, September 28. Retrieved from <http://www.miamiherald.com/news/local/community/miami-dade/article2266518.html>
- Villar, M. E., & Pinto, J. (2013). Coverage of climate change in leading U.S. Spanish-language newspapers. *Journal of Spanish Language Media*, 6, 42–60.
- Ward, B. (2008). A higher standard than 'balance' in journalism on climate change science. *Climatic Change*, 86(1), 13–17.
- Watson, B., & Cavanah, S. (2015). Community information needs: A theory and methodological framework. *Mass Communication and Society*, 18, 651–673.
- Wdowinski, S., Bray, R., Kirtman, B., & Zhaohua, W. (2016). Increasing flooding hazard in coastal communities due to rising sea level: Case study of Miami Beach, Florida. *Ocean & Coastal Management*, 126(June), 1–8.
- Wilson, K. M. (2000a). Communicating climate change through the media: Predictions, politics and perceptions of risk. In S. Allan, B. Adam & C. Carter (Eds.), *Environmental risks and the media* (pp. 201–217). London: Routledge.
- Wilson, K. M. (2000b). Drought, debate, and uncertainty: Measuring reporters' knowledge and ignorance about climate change. *Public Understanding of Science*, 9, 1–13.
- Zamith, R., Pinto, J., & Villar, M. (2013). Constructing climate change in the Americas: An analysis of news coverage in U.S. and South American newspapers. *Science Communication*, 35(3), 334–357.
- Zhang, Y., & Wildemuth, B. (2009). Qualitative analysis of content. In B. Wildemuth (Ed.), *Applications of social research methods to questions in information and library science* (p. 305). Westport, CT: Libraries Unlimited.

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