Extreme Weather: Politics and Public Communication

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Abstract This chapter explores three primary topics: the politics, public communication, and public education initiatives related to extreme weather events in the United States. The chapter begins with an overview of the interconnectedness of government agencies in addressing extreme weather circumstances, followed by the role extreme weather calamities can play in politics and political campaigns. Following this, the evolving role of social media as a tool for government agencies to communicate with the citizenry is described. The chapter closes with a description of various mass communication theories and descriptions of how the theories apply to extreme weather events.

Keywords Government agencies · Mass media · Politics of extreme weather · Public communication · Social media

1 Introduction

Hurricane Sandy, which took place in late October and early November of 2012, was one of the deadliest and most destructive and costliest hurricanes of modern times, with estimated damages at more than $68 billion (CNN 2014). To prepare for the incoming storm in New Jersey, Cape May County officials instructed barrier island residents to evacuate, along with voluntary evacuations in Harvey Cedars, Long Beach, Mantoloking, Barnegat Light, Bay Head, Beach Haven, Ship Bottom, and Stafford. To deal with the crisis, Chris Christie, New Jersey's governor at the time, ordered barrier island residents from Cape May to Sandy Hook to evacuate,

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and he shut down casinos on Atlantic City's renowned Boardwalk. Additionally, U.S. President Barack Obama signed a declaration of emergency, which enabled New Jersey to pursue federal funding and other types of support (CNN Library 2014).

Toward the end of October 2012, Hoboken, N.J. Mayor Dawn Zimmer ordered those people who lived in street-level and basement residencies to evacuate because of potential flooding (CNN Library 2014). Additionally, Logan Township residents were instructed to evacuate, while Jersey Central Power & Light informed workers of the need to work longer shifts. Many schools and colleges also were closed, and numerous government agencies worked together to inform the public of storm conditions and communicate necessary actions (Weinberg 2015).

Beyond the evacuation orders and the sheer magnitude of the storm, many Americans may remember a unique encounter between two political leaders of opposing political parties. President Barack Obama (a Democrat) visited the State of New Jersey to review Sandy damage on October 31, 2012. New Jersey Governor Christie (a Republican) greeted him at the Atlantic City International Airport. Reuters (2012) photos of the meeting portray the two men embracing in a comforting hug and surveying damage together. These images of the two political leaders who represent opposing political parties became widespread throughout the country across public media. This bipartisan union between Obama, a Democrat, and Christie, a Republican, was popular among many U.S. citizens, some of whom were perhaps disenfranchised with political polarization that had run rampant between the United States' two mainstream political primaries at that time. However, there was fallout among Republicans as Governor Christie praised the Democratic president so close to the impending Obama-Romney presidential election (CNN Library 2014). Politically, some viewed Christie as turning on his party during a critical campaign time. Hurricane Sandy and New Jersey represented a prime example of how various government agencies came together to address the circumstances of extreme weather, and how politics can play a significant role in calamities related to extreme weather (Weinberg 2015).

1.1   Blizzards Bring Cooperation

Slightly more than two years after Hurricane Sandy, in 2015, a massive blizzard known as Winter Storm Juno struck Canada and the eastern and central portions of the United States (Gawthrop 2015). Six states declared snow emergencies during the blizzard, and some states enforced travel bans: Massachusetts, Connecticut, Rhode Island, and New Jersey. Passenger rail services, flights, and school days were all affected (Gawthrop 2015).

To cope with the blizzard, various agencies worked together to ensure public safety. For example, Pennsylvania's Department of Transportation treated

roadways with approximately 350 salting trucks, while Pennsylvania Governor Tom Wolf signed an emergency proclamation to ensure a rapid distribution of state funds (Gawthrop 2015). Local government agencies and leaders such as the Philadelphia mayor, Southern Pennsylvania Transportation Authority, and Philadelphia Office of Emergency Management worked together, closing schools and city offices and cancelling trash and bus services, while ensuring that the train system would run for part of the week (Gawthrop 2015). In Connecticut, Governor Dannel Malloy declared a state of emergency, cancelled travel services and announced a travel ban across the state. The Metropolitan Transportation Authority added additional trains to accommodate citizens traveling by rail. The governor had more than 600 crews treat major roads, and issued a declaration of civil preparedness emergency to allocate resources efficiently (Gawthrop 2015).

In New York, Governor Andrew Cuomo made public statements, urging citizens to prepare for changes to their commutes and to take safety precautions, while the Metropolitan Transportation Authority assisted with road salting trucks and crews. The State Emergency Operations Center, state National Guard, and New York State Police all added personnel to deal with the crisis. The Port Authority of New York and New Jersey prepared hundreds of pieces of snow equipment, the New York State Thruway Authority and New York State Department of Transportation enforced its emergency operations. Mayor Bill de Blasio of New York City banned vehicles from the streets for a period of time (Wiltgen 2015).

In Massachusetts, Governor Charlie Baker declared a state of emergency, a travel ban was announced, and tens of thousands of tons of salt were gathered by agencies such as the Fall River Department of Public Works to treat roadways. Snow farms, or strategically located areas to which snow would be relocated, were ready to store snow after the storm passed. In Rhode Island, Governor Gina Raimondo urged citizens to stock enough food and water in their homes for several days and had to declare a state of emergency (Wiltgen 2015). Meanwhile, in New Jersey, Governor Christie declared a state of emergency, enforced a travel ban, and ordered nonessential personnel off the streets. U.S. President Barack Obama in April 2015 made a federal disaster declaration for the January blizzard, resulting in some reimbursements for blizzard-related damages. Once again, as was the case in response to Hurricane Sandy, numerous government bureaucracies came together to respond to the weather and climate crisis and communicate effectively with the public (Wiltgen 2015).

This book, *Extreme Weather, Health and Communities: Interdisciplinary Engagement Strategies*, explores extreme weather, health and communities from various interdisciplinary standpoints. This chapter particularly explores the interconnectedness of government agencies, the role extreme weather has played in U.S. politics, contemporary public communication methods, and theories of public communication on extreme weather.

2   The Interconnectedness of U.S. Government Agencies

The role of governments in extreme weather responses can be very complex. The United States has different levels of government bureaucracies: federal governments, state governments, and local county and city governments. The federal government is composed of three major branches: the executive, legislative, and judicial. American citizens nationally vote for their president, senator, and U.S. House representative. In state elections, they vote for their governor, legislators, and other positions, and in local elections, voters elect county supervisors, city council members, school board members, and other positions. These elected leaders work with large teams of public administrators to manage public monies and run government services.

In state politics, there are numerous commissions and boards, many composed of commissioners and members appointed by the governor, that oversee or regulate specific environmental aspects that relate to extreme weather (Christensen and Hogen-Esch 2006). For example, the California Coastal Commission, on which six commissioners are local elected officials and six serve as appointed officials, has a mission "to protect, conserve, restore, and enhance environmental and human-based resources of the California coast and ocean for environmentally sustainable and prudent use by current and future generations" (California Coastal Commission 2015, p. 1).

The mission of the Federal Emergency Management Agency (FEMA) "is to support our citizens and first responders to ensure that as a nation we work together to build, sustain and improve our capability to prepare for, protect against, respond to, recover from and mitigate all hazards" (FEMA 2015, p. 1). The first time that work was done to assist with a disaster on the federal level was The Congressional Act of 1803 for a New Hampshire town that had been ravaged by fire. After that, various legislation gave some disaster assistance. FEMA was created in 1979 by an executive order, which brought together a variety of different responsibilities associated with disaster into one agency. From then on, FEMA has delivered the promise in its mission of assisting towns around the country with disasters. By November 2007, FEMA had given aid to over 2700 official disasters (FEMA 2015).

FEMA is constantly increasing its effectiveness to help victims of disasters and their towns. The organization continues to grow from experience and feedback from different parties because its goal is constant improvement in its practices. FEMA provides assistance to individuals who have suffered from disasters. The organization also helps people who speak different languages and have disabilities. It works together with many sections of and organizations within the United States including private companies, nonprofits, federal, tribal and local governments to make sure that the country is safe and ready to respond to and mend from major catastrophes, terror attacks and other crises. FEMA also assists with the logistics of a crisis; it helps deliver supplies that disaster sufferers need. It also helps with hazard alleviation, emergency communications, public disaster communications and continuity programs. FEMA helps families and neighborhoods to prepare for all types of hazards (FEMA 2015).

3 Politics and Extreme Weather: Historical Context

In many ways, an elected official's political capital correlates with how he or she responds to extreme weather events. This chapter will explore how political careers have been ruined due to mishandled crises. "When you are a chief executive, your political fortunes are tied to how you are perceived in your official capacity, not your campaign capacity," said former Democratic Governors Association executive director Nathan Daschle (Haberman 2011, para. 6). "For better or worse, these perceptions are usually defined by one or two major events that happened during your tenure" (Haberman 2011, para. 7), he stated. "These are the 'make or break' moments. [Former presidents] Franklin Delano Roosevelt, JFK, George W. Bush, [and mayors] Rudy Giuliani, Haley Barbour, Bill White, [and governors] Kathleen Blanco … and by extension, [current governor and presidential candidate] Bobby Jindal—all were defined by the catastrophic event that happened on their watch. Competence in day-to-day government is important; Competence in times of crisis is absolutely critical. If you pass this test, you shed your burden of proof. If you fail, there is probably no tomorrow" (Haberman 2011, para. 7).

3.1 New York City

Throughout recent history there have been several noteworthy and diverse cases of extreme weather calamities and differences in how they have been addressed by political leaders. For example, in 1969 a terrible blizzard hit New York, ultimately killing 42 individuals and wounding 288 others. Fifteen inches of snow fell on February 9, 1969, and almost half of snow removal failed because equipment had not been properly maintained (Moser 2011). The city was in standstill for three days. In the borough of Queens, people were forced to stay in their homes. Circumstances were so dire that Ralph J. Bunch, a United Nations representative, sent Mayor Lindsay a note saying that he had never seen snow removal handled so poorly in his 17 years of being a resident of Kew Gardens (Moser 2011). Buses, cabs, delivery vehicles, and garbage removal vehicles were forbidden from operating for many days. The mayor made a special trip to Queens, where he was very poorly received. Citizens yelled at him and said that he should be embarrassed. To add to this, the press excoriated him over remarks he made about the weight and ethnicity of a few women who were heckling him. The incident was recorded but radio news refused to air the story (Chan 2009). Big city mayors after Lindsay, Michael A. Blandic of Chicago in 1979 and Marion S. Barry of Washington, D.C., in 1987, were also publicly criticized for their poor handling of blizzards. Mayor Barry was visiting Southern California to watch the Super Bowl, getting his nails done and playing tennis at the Beverly Hills Hilton when a blizzard consumed the

District of Columbia. Barry was severely ridiculed by people who lived in the city when it almost took a week to eliminate snow from the streets (Moser 2011). Mayor Michael Bloomberg seemed to have learned from these mishaps, because when nearly 27 inches of snow fell in Central Park in 2006, he moved fast to address the situation (Moser 2011).

3.2 Chicago

Chicago Mayor Michael Bilandic made such a mistake with a blizzard snow clean-up that he claims it cost him his re-election in 1979. There were major public transportation postponements, with the mayor being charged with making false statements about how things were being handled. For example, Bilandic claimed that open parking lots were available to accommodate snow cleared from the streets, when this was not the case. In fact, one parking lot was full of vandalized automobiles (Moser 2011). Bilandic also said that airports would remain open, when they were, in fact, closed. He said the Chicago Transit Authority would remain in operation, when the trains actually skipped stations in Chicago's Black neighborhoods, leaving thousands of individuals stranded in below freezing weather. This led to bad press (Moser 2011).

3.3 Denver

A blizzard that hit Denver on Christmas Eve in 1982 is said to have cost Mayor Bill McNichols his election in 1983 (Brown 2006). More than 2 feet of snow fell on the city, creating many issues, including closure of one of the world's busiest airports and streets not drivable. Garbage trucks were ordered to pack snow down to a manageable height. Because of that decision, filthy glaciers were present until the May election, one that McNichols lost to Federico Peña (Brown 2006).

3.4 Fort Worth

On a positive note, after a tornado struck downtown Fort Worth, Texas, on March 28, 2000, a group of city officials who called themselves Team United For the Future (TUFF) created a campaign to interest people in visiting the downtown area (Auer 2001). "The idea was born within a week after the tornado hit downtown," said Marilyn Gilbert, the person in charge of marketing for the Fort Worth Chamber

of Commerce. They raised money from some of the bigger downtown businesses. Some of the slogans the group came up with were:

> "You can't judge a town by its plywood."
> "It's been a whirlwind for weeks, but now we're ready for company."
> "When life hands you tornadoes, play twister."

The slogans were unique and somewhat innovative given that they made light of a disaster. These slogans were placed at bus stops, in the windows of businesses, and at entertainment spots. By summer, the town was thriving again and city officials deemed the campaign a success (Auer 2001).

4   Extreme Weather Campaign/Political Influences

Hurricane Sandy put President Barack Obama's 2012 campaign on pause, as he halted his campaign in order to work on storm warning and recovery tasks, including discussions with the National Weather Service about weather patterns and storm forecasts, directing FEMA and other administration organizations about appropriate responses for protection, and finding financial support to help the states affected. Before the storm struck, Obama actually called state governors of states about the approaching storm and inquired about their specific needs. Republican presidential hopeful Mitt Romney made storm-related visits in "swing" states such as Ohio. Romney helped provide people with food, blankets, and sandwiches during his campaign (Marshall 2012).

When New Jersey Governor, Chris Christie, who supported Romney, thanked the president directly and gave him praise on national television, it sent the message that although he is a Republican, Obama had done commendable work in the midst of a crisis. The way that President Obama, a Democrat, handled Hurricane Sandy may have been a major contributing factor to his winning the election. "I wish the hurricane hadn't have happened when it did, because it gave the President a chance to be presidential, and to be out showing sympathy for folks," Romney said. "That's one of the advantages of incumbency" (Marshall 2012; Lavender 2013, p. 1). This quote illustrates how extreme weather can actually play an important role in making and breaking political career opportunities.

Christie was criticized when he was on vacation in Florida while a blizzard was creating severe problems in New Jersey in 2010 (Foley 2012). "This is my sixth winter as governor" (Huey-Burns 2015, para. 10), said Christie, "We've had Hurricane Irene; we've had Hurricane Sandy; for better or for worse, we know how to deal with these situations" (Huey-Burns 2015, para. 10). Learning from his past political mistake, when reporters asked Christie about his political action committee created for the 2016 presidential campaign he said, "The more important issue today is the health and safety of the people of New Jersey" (Huey-Burns 2015, para. 12).

4.1 Tornadoes and Politics

There are also instances of tornadoes playing a role in politics. The Governor of Illinois, Bruce Rauner, announced that the tax deadline would be extended for residents of a few counties that were affected by the tornadoes that hit on April 9th, 2015. The deadline was extended to October 31. "These devastated communities should be focused on healing and recovery, not deadlines" (My Stateline 2015, para. 3) said Governor Rauner. "Once families and businesses have had time to recuperate, they can gather the essential paperwork to file and pay their taxes" (My Stateline 2015, para. 3). When two tornadoes hit Illinois on November 17, 2013 the state asked FEMA for assistance in nine counties; they were denied. Governor Pat Quinn stated that that the state would plea for the decision to be changed. "While we appreciate FEMA's partnership in helping individuals and businesses recover, I'm disappointed in this decision" (State of Illinois 2014, para. 2), Governor Quinn stated. "My Administration will immediately work to develop a strong appeal that demonstrates how much this assistance is needed. The state of Illinois will continue doing everything necessary to help our hardest hit communities rebuild and recover from these historic tornadoes" (State of Illinois 2014, para. 2).

On December 19, 2013, Governor Quinn requested federal aid for several communities in the state of Illinois including the towns of Washington and Wayne. Washington Mayor Gary Manier stated, "On behalf of the city and residents of Washington, I appreciate Governor Quinn's continued partnership and support as we recover" (State of Illinois 2014, para. 4). Costs that equaled over $6.1 million were put together in an assessment determined by FEMA and the Illinois Emergency Management Agency (IEMA) at the beginning of December. That amount is less than the federal threshold for the state, which is $17.8 million. This sum was based on Illinois's population multiplied by $1.35. Governor Quinn did everything he could to assist families and towns across the state recover from the extreme weather that struck that year. More than $10 million in federal aid was appropriated to assist everyone affected by the tornadoes that struck on November 17th. Over $2 million in federal grants were given to assist with home rental, house repairs and replacement of items destroyed in the storms. The U.S. Small Business Administration (SBA) also sanctioned over $8.7 million in special loans for individuals and business disturbed by the tornadoes (State of Illinois 2014).

Governor of Hawaii, Neil Abercrombie, was criticized publicly when he was not available to the media and out of the public spotlight when Hurricane Ana struck Hawaii. This was surprising because county mayors were very visible during the hurricane. The governor had been on television so often during earlier storms that he was condemned for his absence this time (Hawaii News Now 2014).

Governors Bob McDonnell, Martin O'Malley, Andrew Cuomo, and Chris Christie seem to have persevered through Hurricane Irene in 2011 with reputations intact. Damages from Irene were upward of $7 billion. "When you are a chief executive, your political fortunes are tied to how you are perceived in your official capacity, not your campaign capacity" (Haberman 2011, para. 6) stated Nathan

Daschle, former Democratic Governors Association executive director. Overall, the examples just shown are but a few of the many cases where weather has played a significant role in the political arena. In the next section we explore the role of social media and communication about extreme weather.

5   Contemporary Public Communication Methods: The Role of Social Media

Social media has become increasingly popular for political leaders and government agencies to communicate with the public. Facebook (2015), the most widely used social media site in the world, reported an average of 936 million active users on a daily basis in March 2015, with 798 million using mobile devices. Facebook reported 1.44 billion active users on a monthly basis, 1.25 billion of which were mobile. Microblogging service, Twitter (2015), reports 302 million active monthly users in May 2015, and 500 million tweets sent per day. Instagram (2015), a photo sharing service owned by Facebook, reported 300 million monthly active users in May 2015, with 70 million photos posted per day. Other popular sites such as LinkedIn, a professional social networking site, Google+, and Pinterest have large numbers of users. These websites allow leaders and agencies to communicate directly and immediately with citizens.

Social media has also become popular for government agencies to communicate with the citizenry, particularly during crises. Appendices B and C display the government agencies and departments with the highest number of Twitter followers, and how the numbers of followers changed from the previous year. There are many instances in which social media is used by agencies to communicate with the public about extreme weather. For example, on Federal Emergency Management Agency's (FEMA's) social hub Web page (http://www.fema.gov/social-hub), the organization states, "The topics we feature on this page can vary from severe weather conditions to disaster response updates." Examples of FEMA tweets (https://twitter.com/fema), often very informative and engaging during emergencies, are shown in Fig. 1.

6   Public Communication Theories

There are many mass communication theories that help explain approaches and methods for communicating with the public about extreme weather circumstances. This section of the chapter will provide an overview of two pertinent theories, the "Knowledge Gap" and "Uses and Gratifications" theories, and will explain how they relate to the reporting of extreme weather. By examining these theories we can gain a better understanding of the various issues related to public communication around extreme weather.
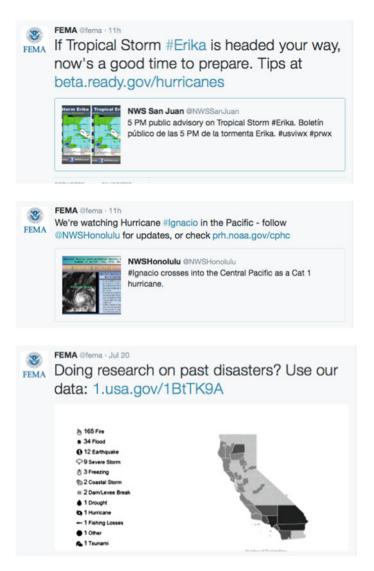
FEMA @fema · 11h
If Tropical Storm #Erika is headed your way, now's a good time to prepare. Tips at beta.ready.gov/hurricanes

NWS San Juan @NWSSanJuan
5 PM public advisory on Tropical Storm #Erika. Boletín público de las 5 PM de la tormenta Erika. #usviwx #prwx

FEMA @fema · 11h
We're watching Hurricane #Ignacio in the Pacific - follow @NWSHonolulu for updates, or check prh.noaa.gov/cphc

NWSHonolulu @NWSHonolulu
#Ignacio crosses into the Central Pacific as a Cat 1 hurricane.

FEMA @fema · Jul 20
Doing research on past disasters? Use our data: 1.usa.gov/1BtTK9A

- 165 Fire
- 34 Flood
- 12 Earthquake
- 9 Severe Storm
- 3 Freezing
- 2 Coastal Storm
- 2 Dam/Levee Break
- 1 Drought
- 1 Hurricane
- 1 Fishing Losses
- 1 Other
- 1 Tsunami

Fig. 1 FEMA tweets

6.1 Knowledge Gap Theory

The Knowledge Gap Theory (Baran and Davis 2011) explores media coverage in cities and towns of different sizes, including urban versus rural communities. It is defined as the systematic difference in the population's less informed and better informed segments. Tichenor et al. (1970) established the theory initially by stating that the news media tend to inform and educate some population segments,

specifically people in higher socioeconomic groups, better than the media may inform and educate others. Over time, the differences between the segments of these two groups tend to grow, resulting in an ever increasing knowledge gap. Knowledge Gap Theory explains why local communities confronting escalating societal conflicts, see conflicts escalate, where ordinarily apathetic or apolitical individuals are eventually drawn into the conflict. As time passes, individuals, including those who are uninformed or less informed, make better use of news media and progressively become more knowledgeable about the specifics of the conflict. Another study using Knowledge Gap Theory found that outside media generally pull back from serving a regional or small town audience. Thus, it becomes more difficult for less knowledgeable people in smaller and/or rural communities to gain access to information they may need. Other factors may explain the knowledge gap, including motivation to seek information, the level of existing knowledge, the level of relative social contact, exposure and retention of information, and communication skills (Graber 2000, 2010). Additionally, individuals may work fulltime, raise families, and not have the time to be up to date on different sources of information. In general, the Knowledge Gap Theory implies that all segments of a community will become more knowledgeable and better informed when escalating social conflict has increased the relevancy of knowledge. In addition, more prevalent news coverage from both local and outside or non-local sources of information provides improved access to information. Decreasing the knowledge gap's size may lead to achievement of a solution based on the highest quality information available. Within small communities, local media avoid or severely limit reporting conflicts, forcing residents to obtain information from larger outside media sources. An example of this might be that if there was a toxic spill of chemicals at the local mine in a small, remote, rural community, the local home-town paper did not cover it but the major journal located in a metropolitan city center 4 h away did provide coverage (Graber 2000, 2010).

The role of power and outside intervention can certainly apply to engagement strategies with communities when government agencies attempt to communicate preventative measures before extreme weather calamities occur. As this book emphasizes, extreme weather events can lead to natural disasters that pose major health threats to various communities. Populations that lack wealth and social power are most vulnerable and at risk to impacts from extreme weather. The Knowledge Gap Theory highlights discrepancies between the various degrees to which individuals are informed and how such discrepancies can lead to vulnerability. Therefore, the goal for government services is to consider that not all groups of people have the same access to knowledge and information related to an extreme weather event.

The Knowledge Gap Theory identifies possible troubling gaps between groups, provides various ideas for overcoming potential gaps, and assumes exchange and engagement in communication. However, the theory assumes that these gaps are inherently dysfunctional, it restricts the focus of gaps that involve social and news conflicts, and it cannot address the innate reasons for gaps.

6.2   Uses and Gratifications Theory

The Uses and Gratifications Theory takes a novel approach in that it looks at how the consumer uses the media instead of how the media influences the consumer. The theory focuses on individuals' media uses and the gratifications they seek from that use. In other words, the theory asks why a group is using a media and what they are deriving from the media. Herta Herzog (1941) conducted a study of radio soap operas and concluded that three major types of gratification were persistent—emotional release, wishful thinking, and valuable advice. How groups utilize media can also be a celebration that brings people together. An example, when individuals ritualistically gather to watch specific television programs (Graber 2000, 2010).

Consider contemporary news coverage of extreme weather calamities, along with the longtime news adage "If it bleeds it leads." Through the lens of Uses and Gratification, one may argue that some, perhaps those not directly affected by extreme weather calamities, may find such circumstances entertaining. This point is proven further by the advent of YouTube and "viral" videos that are shared with the click of a mouse.

There has been a recent revival of the Uses and Gratifications Theory. The revival can be explained by a number of factors: technological advances, increased public awareness, and application of theory to the Internet. Katz et al. (1974) created the five main components of the Uses and Gratifications Model: the audience is active and its media usage is purpose oriented; the audience selects specific media; the media compete with other types of sources to fulfill need satisfaction; individuals are aware of their own specific media use; and content interpretation belongs to the audience. Increasingly, with more accessible social media, the interpretation is being left up to the individual, the consumer of the media.

Hurricane Katrina Example News coverage of Hurricane Katrina provides a specific example of this theory in practice. The hurricane was the most costly natural disaster and one of the deadliest hurricanes in the history of the United States (Cooper and Block 2007). News coverage of the hurricane was extensive, from aerial footage to ground coverage of disaster areas and shelter activity at the Louisiana Superdome (Cooper and Block 2007). In many ways, tragic catastrophes such as Hurricane Katrina receive such extensive coverage from the news media because they potentially lead to higher ratings for news providers due to the human drama that occurs.

On a separate note, President George W. Bush received negative publicity during Hurricane Katrina due to two particular occurrences. First, the news media displayed a photo of the president surveying Katrina damage from a plane. Many criticized the president for lacking care for those affected and being detached. Bush eventually would admit that releasing the photograph was a mistake (Mooney 2010). Second, Bush was criticized for publically praising then FEMA Director Mike Brown (or "Brownie" as Bush called him) in front of television cameras. Brown (2015), in fact was widely criticized for his performance in response to the hurricane. Whether it is at the presidential or local government level, extreme

weather calamities have played a significant role in politics during the media age, often because elected officials' responses are seen as indicative of their leadership abilities.

7   Conclusion

This chapter presented an overview of the politics and public communication aspects of extreme weather. Communication technologies are constantly expanding. Citizens of the world are gaining faster access to pertinent information, along with a substantial amount of disinformation. It is imperative for government leaders and media outlets to continue to share information that is accurate and timely. Most noteworthy is that both the expanded 24-h news cycle and social media have given citizens access to instant salient information. Governments now have the ability to engage constituents immediately and around the clock. Looking ahead, scholars and practitioners must work toward policies and procedures that ensure greater accuracy and optimum methods of communication and public education. Being educators ourselves, we offer a few example exercises for the classroom in Appendix A. Employing such strategies will ultimately strengthen the sense of community in cities and towns across America or anywhere around the world.

8   Best Practices for Extreme Weather Communication

Our chapter has explored a variety of challenges associated with extreme weather and the media. We conclude with four best practices for extreme weather communication.

Governmental Use of the Media All government agencies, from local municipalities and county governments to state and federal agencies, need to have a strong social media presence. Today, people increasingly get their news from Facebook and Twitter feeds. During instances of extreme weather, social media is an excellent method of immediate communication to and from the citizenry on issues such as where to seek shelter, areas to avoid, and where to obtain supplies. Appendices B and C provide pertinent Twitter information for major government agencies. Reviewing these, one can see a broad spectrum of approaches taken by agencies to communicate with the citizenry. Some agencies, such as FEMA (@fema), provide a model for clear, instant, communication of issues of concern to the public. Other approaches allow agencies to quickly release press releases and official statements. Some communications are updated frequently. Above all, each year, these social media are taking an increasing role in response and access to communication for the general public.

Social Media Plan In addition to government agencies, elected officials and heads of emergency response agencies should have a social media presence and a plan in place for cases of extreme weather events. As discussed in this chapter, public scrutiny of officials is increasing, particularly during extreme weather crises. A social media action plan in which officials engage in direct communication with their constituents during these events should exist.

Apolitical Weather Data Interpretation Weather data interpretation and action should be apolitical. Therefore, when extreme weather information and data are being collected, they should be interpreted for what they are, the basic facts, instead of being politically spun. Far too many instances exist in which the opposite is true. Some officials use the spotlight on crises for political gain. Others will ignore scientific findings in order to appeal to special interests during an extreme weather event.

Create Communication Collaborations An early portion of this chapter discusses the interconnectedness of government agencies. All levels of government, from local governments to state and federal governments, need to commit to collaborating and to a communications strategy, in place, so that the agencies can speak as one voice during instances of extreme weather crises. Governments should focus on being more proactive rather than reactive to extreme weather events. To successfully establish such a strategy, and to best communicate with the people who will be affected by such events, coordinating agencies must have a clear social, cultural and economic understanding of the populations they serve.

Appendix A: Extreme Weather Classroom Exercise

1. This chapter discussed the role of social media in pubic communication. Review some of the Twitter accounts listed in Appendices B and C. Which Twitter accounts do the best job at communicating clearly and effectively with the citizenry? Which accounts are most engaging? Which agencies' accounts are updated regularly? Which ones respond quickly and frequently to citizen inquiries? Consider examining the best agencies' Facebook and Instagram pages as well.
2. The beginning if this chapter discusses how New Jersey Governor Chris Christie's responded to Hurricane Sandy. Two years prior, in 2010, Christie was criticized for staying on vacation in Florida while a major snowstorm struck New Jersey. The state's lieutenant governor was also on vacation at the time. Christie defended himself by stating that the State of New Jersey would have responded the same way, regardless of Christie's location, and that he did not want to break a promise to his son to visit Walt Disney World (Weinberg 2015). Assuming it is true that Christie's location made little difference in the state's response, do you believe it was wise for him to stay out of New Jersey instead of engage his community? Why?

3. Pick a recent extreme weather event and research it. Do you believe the various government agencies involved did an effective job at handling the crisis and communicating with the public? Do you have suggestions for increased government efficiency and effectiveness?

4. Assume you are governor of your state and an extreme weather crisis is upon you. Public transportation will be affected, roads will be closed, and many people will panic. Describe your administration's social media strategy during this ordeal. What would you communicate and how often? Describe your radio and television engagement strategies.

5. Provide contemporary examples of the Knowledge Gap and Uses and Gratification Theories, other than the Hurricane Katrina example discussed, as they relate to extreme weather.

Appendix B: U.S. Federal Agency Twitter Followers (2015) and Percent Change from 2014 to 2015

	Agency	# of Twitter followers	% Change over last year	Accounts
1	The White House	3,470,421	32	@whitehouse, @jesseclee44, @lascasablanca, @macon44, @presssec, @WHLive
2	NASA	2,836,812	110	@NASA
3	Centers for Disease Control and Prevention	2,015,693	18	@CDCActEarly, @CDC_BioSense, @CDC_Cancer, @cdc_ehealth, @CDCEMERGENCY, @CDCflu, @CDCgov, @CDCGreenHealthy, @cdchep, @CDCMMWR, @CDCSTD, @CDCTobaccofree
4	Health and Human Services Department	1,465,949	59	@healthcaregov, @phegov, @AIDSgov, @flugov, @foodsafetyesp, @foodsafetygov, @girlshealth, @healthfinder, @hhsgov, @ikngov, @ONC_HealthIT, @opa1, @womenshealth
5	Smithsonian Institution	732,838	48	@smithsonian, @SmithsonianJobs
6	State Department	595,692	91	@ConnectStateGov, @dipnote, @StateDept, @travelgov, @USEmbassyBern, @USEmbassyCyprus, @usembassy_nz, @vsfsAtState

(continued)

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	Agency	# of Twitter followers	% Change over last year	Accounts
7	Agriculture Department	847,574	633	@MyPlate, @peoplesgarden, @RuralTour, @ScienceAtUSDA, @USDA, @USDAFoodSafe_es, @USDAFoodSafety, @USDAForeignAg, @usdafsa, @USDAnutrition, @biopreferred, @USDA_APHIS, @USDA_ERS, @usdagov,, @USDAFoodSafe_es, @USDAFoodSafet
8	Federal Communications Commission	500,873	15	@FCC
9	Justice Department	489,779	19	@TheJusticeDept
10	Peace Corps	477,685	19	@PeaceCorps
11	Food and Drug Administration	464,488	71	@FDAanimalhealth, @fdacber, @FDAcdrhIndustry, @FDADeviceInfo, @fda_drug_info, @FDAMedWatch, @FDArecalls, @FDATobacco, @FDAWomen, @US_FDA
12	FBI	412,842	82	@FBIPressOffice, @NewYorkFBI
13	National Institutes of Health	384,107	68	@NCIExhibits, @NIEHS, @NIHClinicalCntr, @NIHconsensus, @NIHforFunding, @NIHforHealth, @NIHforJobs, @nihlib, @NIH_LRP, @nih_nhlbi, @NIH_ODS, @NIHPtRecruit, @NIHSciEd, @NIHWALS, @ORDR, @WomensHealthNIH
14	Environmental Protection Agency	306,311	78	@AIRNow, @energystarbldgs, @energystarhomes, @epaairmarkets, @EPAburnwise, @EPAcleanuptech, @epacolumbia, @epaespanol, @epagov, @EPAgreenbldg, @epaiaplus, @EPAjobs, @epalive, @epanewengland, @epanews, @eparesearch, @EPAsmartgrowth, @epawater, @EPAwatersen
15	Office of Science and Technology Policy	299,938	28	@whitehouseostp
16	Geological Survey	297,602	69	@nationalatlas, @USGS, @USGSAquaticLife, @usgs_click, @usgs_co, @USGSenergy, @USGS_Ethics, @USGS_Idaho, @usgs_kentucky, @usgs_lcat, @USGSLive, @USGSNeb, @usgsnhd, @_usgsnsmp, @USGS_OR, @USGSPodcasts, @USGS_SpecEider, @usgsstore, @USGSted, @USGSTNMRes

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	Agency	# of Twitter followers	% Change over last year	Accounts
17	National Science Foundation	280,540	70	@NSF
18	Education Department	266,811	110	@arneduncan, @ED_Outreach, @edpartners, @EDPressSec, @FreeResources, @OfficeofEdTech, @teachgov, @usedgov
19	National Institute of Mental Health	249,845	100	@NIMHgov
20	USA.gov	235,629	70	@GobiernoUSA, @GoUSAgov, @USAgov
21	Federal Emergency Management Agency	221,545	78	@craigatfema, @fema, @femaregion1, @femaregion10, @femaregion2, @femaregion3 @femaregion4, @femaregion5, @femaregion6, @femaregion7, @femaregion8, @femaregion9, @usfire
22	Securities and Exchange Commission	212,103	5	@sec_investor_ed, @SEC_Jobs, @SEC_News
23	U.S. Agency for International Development	195,357	65	@usaid, @RajShah
24	U.S. Army	173,345	90	@usarmy
25	Defense Department	218,066	81	@DeptofDefense, @DoDSpokesman, @AFPW_Articles, @ArmedwScience, @DoDLiveMil, @thejointstaff
26	Homeland Security Department	151,948	n/a	@dhsgov, @DHSJournal, @dhsscitech, @NTASAlerts, @ReadydotGov
27	U.S. Marine Corps	133,062	143	@usmc
28	United States Holocaust Memorial Museum	124,178	101	@holocaustmuseum
29	U.S. Navy	118,653	295	@navynews, @usnavy
30	U.S. Air Force	116,324	101	@afpaa, @airforcenews, @usafpressdesk, @usairforce
31	National Cancer Institute	97,479	100	@ncibulletin, @NCIcaBIG, @NCICancerCtrl, @NCIExhibits, @NCIHINTS, @ncimcmedia, @ncimedia @nciprevention, @NCIsbir, @NCISymptomMgmt, @NCITechTransfer, @NCItrialsatNIH, @NCItsm3, @smokefreegov, @smokefreewomen, @thenci
32	National Weather Service	96,965	115	@usnwsgov, @NHC_Atlantic

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	Agency	# of Twitter followers	% Change over last year	Accounts
33	Office of the Vice President	82,700	148	@VP
34	Energy Department	74,611	126	@ENERGY, @solar_decathlon
35	National Library of Medicine	71,728	169	@aidsinfo, @medlineplus4you, @ncbi, @ncbi_pubmed, @NLMGlobalHealth, @nlm_harrypotter @NLM_LHC, @nlm_newsroom, @NLM_SIS, @WomensHealthNIH
36	National Park Service	71,664	83	@GoParks, @NatlParkService, @NPSVIPNetwork
37	Fish and Wildlife Service	65,746	109	@USFWSPacSWest, @usfws_wsfr, @usfwshq, @usfwsinternatl, @usfwsmidwest, @usfwsmtnprairie, @usfwsnortheast, @usfwspacific, @usfwsrefuges, @usfwssoutheast
38	U.S. Coast Guard	59,271	66	@Amver, @BoatingCampaign, @cgchealy, @cges, @Flotilla1105, @Flotilla4, @forcecompao, @GloucesterAUX64, @iCommandantUSCG, @uscgaux, @USCGAUXD8CR, @USCG_AWW, @uscoastguard
39	Voice of America	57,137	171	@voa_news
40	National Ocean Service	51,180	69	@usoceangov
41	Navy Seals	50,749	136	@us_navyseals
42	Veterans Affairs Department	49,545	110	@DeptVetAffairs
43	Labor Department	47,764	93	@usdol
44	U.S. Embassy Bangkok	42,871	39	@USEmbassyBKK
45	National Archives and Records Administration	41,679	143	@archivesnews, @dferriero, @discovercivwar, @DocsTeach, @FedRegister, @NARA_RecMgmt, @TodaysDocument, @usnatarchives
46	Secret Service	40,930	45	@SecretService
47	Transportation Department	38,063	66	@RayLaHood
48	Federal Reserve Bank of New York	34,102	137	@libertystecon, @NYFed_data, @NYFed_news
49	Interior Department	33,345	117	@Interior, @usinteriorjobs
50	Small Business Administration	32,674	139	@sbagov

Note FCW Staff (2012b). Retrieved from FCW Staff 2012a

Appendix C: Twitter Handles for Major Public Agencies

	Agency	# of Twitter followers	% Change over last year	Accounts
1	The White House	3,470,421	32	@whitehouse, @jesseclee44, @lascasablanca, @macon44, @presssec, @WHLive
2	NASA	2,836,812	110	@NASA
3	Centers for Disease Control and Prevention	2,015,693	18	@CDCActEarly, @CDC_BioSense, @CDC_Cancer, @cdc_ehealth, @CDCEMERGENCY, @CDCflu, @CDCgov, @CDCGreenHealthy, @cdchep, @CDCMMWR, @CDCSTD, @CDCTobaccofree
4	Health and Human Services Department	1,465,949	59	@healthcaregov, @phegov, @AIDSgov, @flugov, @foodsafetyesp, @foodsafetygov, @girlshealth, @healthfinder, @hhsgov, @ikngov, @ONC_HealthIT, @opa1, @womenshealth
5	Smithsonian Institution	732,838	48	@smithsonian, @SmithsonianJobs
6	State Department	595,692	91	@ConnectStateGov, @dipnote, @StateDept, @travelgov, @USEmbassyBern, @USEmbassyCyprus, @usembassy_nz, @vsfsAtState
7	Agriculture Department	847,574	633	@MyPlate, @peoplesgarden, @RuralTour, @ScienceAtUSDA, @USDA, @USDAFoodSafe_es, @USDAFoodSafety, @USDAForeignAg, @usdafsa, @USDAnutrition, @biopreferred, @USDA_APHIS, @USDA_ERS, @usdagov,, @USDAFoodSafe_es, @USDAFoodSafet
8	Federal Communications Commission	500,873	15	@FCC
9	Justice Department	489,779	19	@TheJusticeDept
10	Peace Corps	477,685	19	@PeaceCorps

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	Agency	# of Twitter followers	% Change over last year	Accounts
11	Food and Drug Administration	464,488	71	@FDAanimalhealth, @fdacber, @FDAcdrhIndustry, @FDADeviceInfo, @fda_drug_info, @FDAMedWatch, @FDArecalls, @FDATobacco, @FDAWomen, @US_FDA
12	FBI	412,842	82	@FBIPressOffice, @NewYorkFBI
13	National Institutes of Health	384,107	68	@NCIExhibits, @NIEHS, @NIHClinicalCntr, @NIHconsensus, @NIHforFunding, @NIHforHealth, @NIHforJobs, @nihlib, @NIH_LRP, @nih_nhlbi, @NIH_ODS, @NIHPtRecruit, @NIHSciEd, @NIHWALS, @ORDR, @WomensHealthNIH
14	Environmental Protection Agency	306,311	78	@AIRNow, @energystarbldgs, @energystarhomes, @epaairmarkets, @EPAburnwise, @EPAcleanuptech, @epacolumbia, @epaespanol, @epagov, @EPAgreenbldg, @epaiaplus, @EPAjobs, @epalive, @epanewengland, @epanews, @eparesearch, @EPAsmartgrowth, @epawater, @EPAwatersen
15	Office of Science and Technology Policy	299,938	28	@whitehouseostp
16	Geological Survey	297,602	69	@nationalatlas, @USGS, @USGSAquaticLife, @usgs_click, @usgs_co, @USGSenergy, @USGS_Ethics, @USGS_Idaho, @usgs_kentucky, @usgs_lcat, @USGSLive, @USGSNeb, @usgsnhd, @_usgsnsmp, @USGS_OR, @USGSPodcasts, @USGS_SpecEider, @usgsstore, @USGSted, @USGSTNMRes
17	National Science Foundation	280,540	70	@NSF
18	Education Department	266,811	110	@arneduncan, @ED_Outreach, @edpartners, @EDPressSec, @FreeResources, @OfficeofEdTech, @teachgov, @usedgov

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	Agency	# of Twitter followers	% Change over last year	Accounts
19	National Institute of Mental Health	249,845	100	@NIMHgov
20	USA.gov	235,629	70	@GobiernoUSA, @GoUSAgov, @USAgov
21	Federal Emergency Management Agency	221,545	78	@craigatfema, @fema, @femaregion1, @femaregion10, @femaregion2, @femaregion3 @femaregion4, @femaregion5, @femaregion6, @femaregion7, @femaregion8, @femaregion9, @usfire
22	Securities and Exchange Commission	212,103	5	@sec_investor_ed, @SEC_Jobs, @SEC_News
23	U.S. Agency for International Development	195,357	65	@usaid, @RajShah
24	U.S. Army	173,345	90	@usarmy
25	Defense Department	218,066	81	@DeptofDefense, @DoDSpokesman, @AFPW_Articles, @ArmedwScience, @DoDLiveMil, @thejointstaff
26	Homeland Security Department	151,948	n/a	@dhsgov, @DHSJournal, @dhsscitech, @NTASAlerts, @ReadydotGov
27	U.S. Marine Corps	133,062	143	@usmc
28	United States Holocaust Memorial Museum	124,178	101	@holocaustmuseum
29	U.S. Navy	118,653	295	@navynews, @usnavy
30	U.S. Air Force	116,324	101	@afpaa, @airforcenews, @usafpressdesk, @usairforce
31	National Cancer Institute	97,479	100	@ncibulletin, @NCIcaBIG, @NCICancerCtrl, @NCIExhibits, @NCIHINTS, @ncimcmedia, @ncimedia @nciprevention, @NCIsbir, @NCISymptomMgmt, @NCITechTransfer, @NCItrialsatNIH, @NCItsm3, @smokefreegov, @smokefreewomen, @thenci

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	Agency	# of Twitter followers	% Change over last year	Accounts
32	National Weather Service	96,965	115	@usnwsgov, @NHC_Atlantic
33	Office of the Vice President	82,700	148	@VP
34	Energy Department	74,611	126	@ENERGY, @solar_decathlon
35	National Library of Medicine	71,728	169	@aidsinfo, @medlineplus4you, @ncbi, @ncbi_pubmed, @NLMGlobalHealth, @nlm_harrypotter @NLM_LHC, @nlm_newsroom, @NLM_SIS, @WomensHealthNIH
36	National Park Service	71,664	83	@GoParks, @NatlParkService, @NPSVIPNetwork
37	Fish and Wildlife Service	65,746	109	@USFWSPacSWest, @usfws_wsfr, @usfwshq, @usfwsinternatl, @usfwsmidwest, @usfwsmtnprairie, @usfwsnortheast, @usfwspacific, @usfwsrefuges, @usfwssoutheast
38	U.S. Coast Guard	59,271	66	@Amver, @BoatingCampaign, @cgchealy, @cges, @Flotilla1105, @Flotilla4, @forcecompao, @GloucesterAUX64, @iCommandantUSCG, @uscgaux, @USCGAUXD8CR, @USCG_AWW, @uscoastguard
39	Voice of America	57,137	171	@voa_news
40	National Ocean Service	51,180	69	@usoceangov
41	Navy Seals	50,749	136	@us_navyseals
42	Veterans Affairs Department	49,545	110	@DeptVetAffairs
43	Labor Department	47,764	93	@usdol
44	U.S. Embassy Bangkok	42,871	39	@USEmbassyBKK
45	National Archives and Records Administration	41,679	143	@archivesnews, @dferriero, @discovercivwar, @DocsTeach, @FedRegister, @NARA_RecMgmt, @TodaysDocument, @usnatarchives
46	Secret Service	40,930	45	@SecretService

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	Agency	# of Twitter followers	% Change over last year	Accounts
47	Transportation Department	38,063	66	@RayLaHood
48	Federal Reserve Bank of New York	34,102	137	@libertystecon, @NYFed_data, @NYFed_news
49	Interior Department	33,345	117	@Interior, @usinteriorjobs
50	Small Business Administration	32,674	139	@sbagov

Retrieved from FCW Staff 2012b

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