

DISASTER MODE: MAPPING MEDIA USE, DEPENDENCY, AND  
GRATIFICATIONS THROUGH THE PREPARATION AND IMPACT PHASES  
OF A SEVERE WEATHER EVENT

by

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## **ABSTRACT**

When natural disasters affect human populations, effective communication is key to response and recovery. This study seeks to understand how and why people use various media in the early stages of severe weather events. A survey (N=289) was distributed online to participants, who answered a series of questions about their normal media use, as well as their media use during the preparation and impact phases of a severe weather event. Results show that the most drastic change in media consumption occurs in the preparation phase, in the hours leading up to the event. There was very little change in media use, dependency, or gratifications sought between the preparation phase and the impact phase. Use and dependency increased significantly in the preparation phase for TV News and Local Radio. Online News Sites and Apps ranked highest in use throughout the event, although there was a significant decrease between each phase. There were also significant decreases in use and dependency for Facebook and Twitter, which rounded out the top five media types used during a severe weather event. Follow-up tests revealed that much of the reason for the overall decrease in media use and dependency throughout can be attributed to loss of power and Internet access during the event. The results of this study show that the most common gratifications sought in the preparation and impact phases of a severe weather event involve reducing uncertainty and maintaining a social connection with friends and family.

The findings of this study contribute to a larger field of disaster communications research and provide evidence for the validity of uses and gratifications approaches to such research.

## **DEDICATION**

This thesis is dedicated to everyone who helped me through the twists and turns of my career as a student navigating graduate study in this field. In particular, my family who made furthering my education possible and kept me going throughout the process.

## LIST OF ABBREVIATIONS AND SYMBOLS

SD Standard deviation

$p$  Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value

< Less than

= Equal to

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## CHAPTER 1

### INTRODUCTION

When Hurricane Camille made landfall in the summer of 1969, many were caught off guard and ill-prepared for what would be one of the deadliest storms in United States history. Camille defied projections, intensifying quickly in the Gulf of Mexico to top the Saffir-Simpson Hurricane Wind Scale as a Category 5 before bringing 190-mph winds ashore in Bay St. Louis, Mississippi, much farther west than most people expected (*The Times-Picayune*, 2012). While radio stations in Biloxi, Mississippi, broadcast increasingly frantic messages during the 18 hours before landfall as the storm approached, most people west of town heard much less dire predictions from New Orleans media. As a result, less than half of the population evacuated, and about 150 people died in Mississippi and Louisiana.

The issues of effective preparedness communication and media myth-making showed up again 36 years later, when Hurricane Katrina wreaked havoc on the Gulf Coast and caused critical infrastructure failures in Mississippi and Louisiana. Much like Camille, Katrina deviated from its projected path, bringing a 30-foot storm surge to an area where people were basing their preparations on the advice of those who remembered a storm from nearly four decades earlier (“Tropical Cyclone Report,” 2005). A blog post from Biloxi’s local newspaper, the *Sun Herald*, read, “[local weatherman] Jim Cantore, with Treasure Bay Casino in the background, is invoking Camille. This one is going to be bad. Make sure you have a plan, supplies. If you can leave, I think you should...” (Pender, 2005).

While the coastal Mississippi media were issuing personalized warnings, the New Orleans media were simply reporting mandatory evacuation orders, which many residents did not follow. Much of the media attention following the storm focused on the city of New Orleans, where nearly 80 percent of the city was flooded after critical failures in the levee system gave way to the storm surge. The storm caused over 1,800 deaths in total, and an estimated \$108 billion in damage (CNN, 2013). While the government agencies responsible for building and maintaining the levee system were often blamed for the human tragedy that occurred in New Orleans, the erroneous reporting that followed is still cited to this day as a major failure of local and national media. Much scholarly research has focused on the perpetuation of false reports about looting, lawlessness, and violence in New Orleans, especially in the Superdome, which served as a shelter for many residents who could not or did not evacuate. Media reports often used frames, both in visual representations and in text, which exaggerated the situation to levels similar to urban warfare (Fahmy, Kelly, & Kim, 2007; Tierney, Bevc, & Kuligowski, 2006). While the erroneous reporting caused credibility problems for the media at large, the exaggerated claims also contributed to an organizational response failure due to the agenda-setting function of media, which means the reports coming out of the city caused responders to improperly divert resources or, in some cases, influenced some to evacuate rather than report for duty (Barnes, et al., 2008; Izard & Perkins, 2010).

Alongside the issue of false or exaggerated reports gaining traction, structural failures of traditional communication systems made it difficult for media outlets to effectively disseminate valuable information to the affected population. During Katrina, phone lines were damaged, rendering phones with local area codes useless when trying to connect to other local numbers. This forced residents and journalists to adapt by using a spider web of communication and

rapidly adopting emerging media, such as text messaging and online blogs (Miller, Roberts, & LaPoe, 2014). The new media channels utilized during Katrina provided journalists with more avenues through which to effectively communicate with their audience, but as social media became a key component of the modern media landscape, the all-too-familiar problems of depending on various media to fulfill all informational needs continued.

During the April 27, 2011 tornadoes that ravaged Tuscaloosa and Birmingham, *The Tuscaloosa News* used its reporting resources to dispel rumors that were circulating wildly via social media (Sonderman, 2012). Anecdotes of bodies strewn about the roof of University Mall or dogs and young children being carried from Tuscaloosa to Birmingham spread quickly on Twitter and Facebook, but the newspaper staff laid them to rest by maintaining a continuously updated tornado rumor blog, as well as posting real-time reports on Twitter. The west Alabama newspaper staff was presented with the 2012 Pulitzer Prize for Breaking News, due in part to the live reporting done by trained journalists who fanned out to survey the situation.

While the efforts of the journalists were recognized by the industry's highest honor, the fact that properly serving the readership was worthy of such commendation warrants some questioning into the overall effectiveness of media when it comes to disaster response. Valuable information that would aid in the decision-making process of individuals and organizations gets lost in an environment saturated with false or exaggerated claims, which do nothing to improve people's conditions and in fact worsen the situation by inciting panic and clouding judgment.

A valuable line of modern media research would focus on the audience members themselves, seeking to understand where they are looking for information during times of crisis, what type of information they are looking for, and most importantly, why they are choosing to use the media they use. Study of the audience's needs and media use during disaster provides

valuable insight for news outlets and public health officials who are constantly adapting their tactics to fit the modern media landscape.

By employing a theoretical approach of uses and gratifications, media researchers can further understanding of what people want, need, and expect from the multitude of media channels that are available. An increased understanding of the gratifications sought through various forms of media during a disaster would increase the effectiveness of news outlets, public officials, and emergency managers by providing guidance on how to “meet them where they are” and disseminate necessary information in a way that is more accessible and valuable to the community. While gratifications research is not predictive, it is invaluable when describing how and why people use particular media at particular times, making it the best possible approach for study in this area of disaster communication.

This study seeks to employ the uses and gratifications approach alongside previous work in media dependency theory to better understand how people use media in the early stages of severe weather events and why (Haddow & Haddow, 2013). By using an online survey prompting respondents to report their media use in both their normal day-to-day routine and their media use in the preparation and impact phases of an event, this study will contribute to a body of research that will provide valuable insight into how people use media differently when their environment changes drastically during severe weather.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **Uses and Gratifications**

Rather than focusing on how media affects a person exposed to media, gratifications research focuses on how and why the audience members themselves choose to engage and consume different media. While uses and gratifications theory was not explicitly defined until the 1970s, its roots date back to the 1940s, when some researchers started to examine why people tuned in to certain radio programs.

As early as 1942, researchers began to use qualitative interviews to study the inner workings of regular listeners of daytime radio soap operas and described three different gratifications people could obtain from tuning in. The three gratifications were emotional, wishful thinking, and learning (Herzog, 1942). While Herzog continued throughout the 1940s to study the radio listener rather than the effects of radio, others in the field developed a way to calculate which media an individual would choose given certain circumstances. By the mid 1950s, scholars had come up with a model and formula based heavily on the amount of gratification expected and amount of effort required to obtain it (Schramm, 1954).

By the 1960s, the groundwork was already in place for Jay Blumler and Elihu Katz to take previously published gratifications research and extrapolate the methodology into a completely new way of studying media. Blumler set the tone for the eventual development of a theory when he and his colleagues published a book chapter that turned the traditional perspective of the television audience upside down (1972). In the publication, Blumler and his

colleagues proposed four uses of media: diversion, personal relationships, personal identity, and surveillance. Following that publication, Blumler and his colleagues were joined by several researchers including Elihu Katz, and the group of six developed and published the first description of uses and gratifications theory in 1973. Their description provided five potential gratifications sought by media use: information, identification, entertainment, interaction, and escape.

In the seminal work of uses and gratifications theory, the researchers describe the primary tenets of UGT and how the approach can be applied to conduct valuable research in the field of mass communication (Katz, Blumler, & Gurevitch, 1973). The main purpose of UGT is to describe and understand what people do with media, rather than what media does to people. The theory relies on several assumptions, which have their roots in the non-traditional media research of the 1960s.

First and foremost, it is assumed in gratifications research that the audience member is active rather than passive, and media use is goal-directed. This assumption is a stark contrast to the published opinions of previous researchers, who posited that most mass media experiences represent pastime or chance circumstances rather than purposeful activity (Bogart, 1965). Second, it is assumed that much of the initiative required to link gratification and media choice lies with the audience member. This means that it is difficult to theorize a straight-line relationship between media content and attitudes or behavior because an active audience member is not necessarily susceptible to being affected by media in a certain, predictable manner.

Another key assumption of UGT is that media compete with other sources of need satisfaction. The needs served by media are only a segment of the greater range of human needs, so for researchers to accurately study the gratifications of media use, they also need to consider

non-mediated ways to fulfill the same need. This assumption in its original environment focused on competition between media and traditional or “older” ways to fulfill needs, but modern applications of the theory tend to focus on the variety of media available to individuals at any given time and how those media compete for the attention of the audience.

Along with the assumption that the audience member is active and goal-oriented in their media use, it has to be assumed for methodological purposes that people are self-aware enough to accurately report their motivations for using media. This form of research places much of the onus on the individual participants and their ability to recall what they were thinking or doing at a particular time because motivations cannot be directly observed. Without assuming that the study subjects have the cognitive ability to accurately report what the researchers are measuring, the value of the theory diminishes greatly.

The final assumption of uses and gratifications theory is less of an assumption and more of a recommendation for researchers employing the prescribed methods. The shapers of the theory state that value judgments about the cultural significance of mass media should be suspended when studying the audience. Because the theory deals primarily with the front-end use of media rather than the back-end effects of said use, the research is most effectively conducted when studying the audience’s orientations and motivations in a vacuum, free from statements of significance. This is because based on the previous assumptions about the activity of the audience member and their ability to self-report motivations, much of the research done in gratifications is conducted on an individual level, where needs and uses can vary greatly.

With the assumptions in place, the primary concept of the theory begins to take shape. According to UGT, people choose to use media in order to satisfy certain needs, known as gratifications. The original five possible gratifications of media use – information, identification,

entertainment, interaction, and escape – were described by the originators of the theory to comprise an exhaustive list of all possible motivations for using media. Over time, technological advancement and more sophisticated methodology led to several researchers adapting or adding to the original list of possible gratifications, but the five motivations first described by Katz, Blumler, and Gurevitch (1973) remain at the core of uses and gratifications theory.

The first gratification of media use is *information*. This gratification is sought by people who want to be informed or educated about something. Because it is assumed that people are self-aware enough to know their own motivations for using media, it is also assumed that people are self-aware enough about the things they know and do not know. It is difficult to argue that everybody wants to learn about everything they do not know, but it can be reasonably assumed based on the active audience portion of UGT that a person who wants to be educated on a particular topic may seek particular media to accomplish that goal.

Another possible gratification of media use is *identification*. According to the original describers of the theory, this means people consume media in order to identify with the characters or the situation presented in the media. This is typically seen in studies that ask specifically if people watch certain programs because the main actors are similar to the audience member.

The *entertainment* gratification is as simple as it sounds. The idea is that people use media because they recognize their need to be entertained while they have leisure time. This is most often described as a treatment of the condition of boredom, which touches on Zillmann's mood management theory (1988). The development of this particular gratification stems from the large amount of research conducted regarding television audiences, since television was seen as primarily an entertainment medium.

Arguably the most important gratification of media use for modern research is *social interaction*. The original describers of the theory wrote about the use of traditional media such as television to gain common knowledge that would then be taken into face-to-face interpersonal communication. Even though it was first stated as a gratification for improving water-cooler conversations, the social interaction aspect of media use has become a hot topic of scholarly study due to the rise of mobile phones, Internet, and social media.

The final gratification described by the originators of the theory is *escape*. This is typically written as a need for an individual to be distracted from the stresses of everyday life. There is some bleed between the escape concept and other gratifications because they seem to serve the need to pass time, which would lend credence to the prevailing idea of media use as casual and circumstance-driven. As Katz (1962) wrote when critiquing the idea that media content can be “escapist,” there is no reason why media used to escape daily life cannot also serve the other needs of an individual, such as identification or simple entertainment.

The heavily subjective nature of the potential gratifications is just one of many avenues for critique of uses and gratifications theory. Since its origination, the theory has been plagued by heavy critique from scholars arguing that it does not meet the requirements to be considered a valid theory, much less a good one. In one of the earliest critiques of UGT, Swanson (1976) wrote that “the nature of *the* theory underlying uses and gratifications research is not totally clear.” Swanson wasn’t alone, as many scholars claimed that researchers employing the approach were “crassly atheoretical,” “perversely eclectic,” or “ensnared in the logical pitfalls of functionalism” (Elliot, 1974; Swanson, 1976; Carey & Kreiling, 1974).

Much of the criticism about the theory and the researchers that use it can be understood by running UGT through the gauntlet of requirements for good communication theory defined by

Robert Heath and Jennings Bryant (2013). First of all, it is crucial to recognize the definition of theory, which states, “a theory is a systematic and plausible set of generalizations that explain some observable phenomena by linking concepts in terms of an organizing principle that is internally consistent.” When it comes to UGT, however, the theory does little to predict a phenomena other than the fact that people use media. Furthermore, a key component of good theory is that whatever is trying to be explained is observable, and can therefore be supported with empirical evidence. Uses and gratifications theory doesn’t follow that rule, but instead requires researchers to trust that the self-reported motivations of the subjects are accurate enough to be considered empirical.

Although UGT has been critiqued heavily since its first description, a common theme of value to the field still held true. Gratifications research, because it is audience-focused and studies only the front-end use of mediated communication, has undeniable value when it comes to describing the adoption of new forms of media. Even in the earliest days of the theory, Blumler (1979) was reiterating the fact that uses and gratifications research has value in a technologically advancing world because it does not assume that the audience is a passive victim of media, and as the agency of the media user increases, so would the value of audience-oriented research. Years later, as disruptive technology rapidly changed the role of media, scholars began looking back to gratifications research, which had been a relatively quiet field in the late 80s and early 90s. In 1996, as the Internet was beginning to shape the way electronic media would infiltrate daily life, researchers wrote that uses and gratifications theory would experience a resurgence and therefore needed to be adapted for modern study (Lin, 1996). In Lin’s essay about the theory, he wrote that although many of the theoretical challenges posed by critics of the theory still were not reconciled, the applicability of the theory in a changing media landscape

where the user is gaining independence from mass media is unmatched. Lin was not alone in arguing for UGT in the Internet age. In one of the most notable works of modern gratifications research, Thomas Ruggiero wrote that the rise of computer-mediated communication would create a desperate need for scholarly study on the media use of the individual rather than the audience at large (Ruggiero, 2000).

Because of the theory's applicability to study of emerging media, UGT has experienced a resurgence in the modern era. The theory has been applied to understand use of everything from the Internet (LaRose & Eastin, 2004) to portable MP3 players (Zeng, 2011). Because of its focus on the individual rather than the audience at large, the theory has been applied to study use of existing media forms in particular situations, such as natural disasters. Several of those studies provide valuable insight for research that seeks to increase the effectiveness of communication during times of crisis, where affected populations experience high stress and uncertainty.

As early as the late 1980s, researchers were studying news media operations during natural disasters. Researchers found that disasters often force the goals of media practitioners and public health officials to align, but conflicts that occur between news media and government often hinder effective communication to the public (Sood, Stockdale, & Rogers, 1987). While this study did not specifically employ uses and gratifications theory, it served as the framework for future disaster communications research that focused on the needs of the affected population.

One of the most heavily cited studies in disaster research is the study of media use during Hurricane Danny (Piotrowski & Armstrong, 1998). In the weeks following the hurricane's landfall in Florida, researchers distributed a survey in the community asking about their media use during the storm. Applying a simplistic uses and gratifications approach, the researchers found that residents primarily used broadcast television during the hurricane because of its

immediacy and ability to provide strong visuals. Because the study was conducted in 1998, it can be reasoned that the low frequency of reported Internet use would be much different in the current media landscape because more people have adopted the technology and understand it well enough to seek it out in a disaster.

An Australian study of media use during dangerous floods was one of the first to apply UGT to determine that people develop different needs throughout the course of a disaster, and therefore seek out different media depending on the current circumstances (Ryan, 2013). The author used qualitative research methods to examine media use of individuals affected by floods within a 12-month period. The interviews revealed that the urgency of the situation had an effect on how the subjects used media. During a slow-moving flood, subjects reported seeking information via Internet sources and word of mouth from friends and family. When the situation involved a flash-flood, however, people turned to television news because of its constant coverage and up-to-date information. The findings of this study support the hypothesis that people consume media differently throughout the stages of a disaster based on environmental circumstances.

Studies that apply uses and gratifications theory to human crises rather than natural disaster are also valuable when understanding effective disaster communication because the motivations reported from natural disaster victims and those experiencing human tragedy often stem from feelings of high stress and uncertainty. For example, a study on the media use of Israeli evacuees revealed that the evacuees used a diverse network of media to satisfy different needs in different situations (Lev-On, 2012). The study pointed out a need for interpersonal communication when the safety or wellbeing of friends and family was uncertain, and a reliance on local media rather than social media for reliable information. The findings point back to the

common problem of rumor and myth-making via social media, where equal voice is given to the general population and trained journalists.

A recent study of media use during Hurricane Katrina and Hurricane Felix demonstrated some harmful effects of relying on digital and social media in a disaster (Cupples & Glynn, 2013). By conducting a content analysis of social media posts during the storms, the researchers found that new media such as Facebook and Twitter have a significant impact on the remediation of disaster, which is typically not an isolated event but rather a long-term recovery. Because of this, the researchers point out the potential dangers of relying on social media in a crisis, especially for minority communities, who often find themselves being “othered” by media and opinion-makers online. That being said, much of the gratifications research that has been conducted on social media such as Twitter and Facebook have revealed an emphasis on the need for social interaction. Using a regression analysis, Chen (2011) found that active Twitter use results in an increased feeling of informal camaraderie, which can be helpful in the recovery and remediation phases of disaster.

One of the most recent studies in disaster communication draws from much of the studies previously mentioned and ties together several key themes of uses and gratifications theory. Following the catastrophic 2014 flood in Malaysia, researchers collected a sample of 500 survey responses to understand how people affected by the flood used social media (Aisha, Wok, Manaf, & Ismail, 2015). The results of the study show that people who adopt and actively use new media are significantly more likely to engage in information sharing behaviors using new media. The findings of this study are important to the field of gratifications research in disaster for several reasons. First, the study found that in the absence of broadcast media, people turned to direct interpersonal communication, specifically a text messaging mobile app. This finding is

supported by previous literature that found people eventually develop a need for interpersonal communication in times of high stress and uncertainty, so it supports the validity of applying UGT to disaster communication in a technologically advanced culture. More importantly, and possibly more concerning for media practitioners, is the finding that early adopters are the ones who are most likely to disseminate information on a platform that both frequent users and non-frequent users seek out to reduce uncertainty. This means that much of the message and interpretation can be shaped by whatever demographic represents the heaviest users of a medium that suddenly becomes relevant in a disaster. This potential shaping of messages harkens back to the viral spreading of rumor and harmful clouding of media channels that leads to ineffective communication when a population needs accurate and reliable information the most.

In a 2012 study, the researcher effectively applied a uses and gratifications approach to explain what motivated people affected by the April 27, 2011 tornado outbreak in Tuscaloosa, Alabama to take to Twitter and post (Maxwell, 2012). Using a series of ANOVA tests, the researcher found that people tweeted mostly for social, informational, and entertainment reasons. Also, the researcher showed that most of the participants' Twitter use occurred in the recovery phase, or in the weeks following the event. This 2012 study is useful for shaping a proper uses and gratifications approach to how people use media in a disaster.

A uses and gratifications approach will be employed for this study because of its versatility when analyzing the front-end consumption of media by the user. This study is concerned primarily with where people choose to get their news during severe weather events and why. Specifically, this study will use UGT to examine survey responses and identify gratifications that change drastically between normal day-to-day media use and media use in the impact and preparation phases of a severe weather event.

## **Media Dependency Theory and Uncertainty Reduction**

The theoretical counterpart to uses and gratifications that will be used for this study is Media Dependency Theory, specifically when it comes to uncertainty reduction. While MDT is primarily deployed in a crisis communications context, the similarities between severe weather events and human or organizational crises ensure that the theory can provide value to this study. A crisis is defined as an event that is specific and surprising, causing abnormally high levels of uncertainty and threat perception (Seeger, Sellnow, & Ulmer, 2003). Researchers have used Media Dependency Theory to study media use following everything from terrorist attacks (Lachlan, Spence, & Seeger, 2009; Lowrey, 2004) to extreme weather events such as blizzards and hurricanes (Spence, Lachlan, & Griffen, 2007).

In one of the seminal works of media dependency theory, the meaning of “dependency” is described as “a relationship in which the satisfaction of needs or the attainment of goals by one party is contingent on the resources of another party” (Ball-Rokeach, 1985). For the purposes of studying media use, this is understood as the media user seeking a satisfaction of a particular need by utilizing the resources of mass media. Much like uses and gratifications theory, media dependency theory is best deployed in an audience-centric context because individual dependency levels and motivations can vary greatly within a population. This audience-centric approach makes the theory a valuable tool when studying media use in disaster scenarios, as demonstrated by previous researchers.

Following the Red River Valley floods in April 1997, researchers found that dependency on local radio increased, and respondents said they saw local officials, local radio, and citizens cooperating in an interdependent and mutually supportive relationship (Hindman & Coyle,

1997). Researchers also analyzed media dependency following the Mount St. Helens eruption in Washington state and found that mass media became more important than interpersonal communication as a source of information (Hirschburg, Dillman, & Ball-Rokeach, 1986). That being said, some research using MDT has also found that the importance of interpersonal networks increases during a community disaster, even though rumor and other misleading information may be disseminated easier through these channels (Turner & Paz, 1986).

As time moves on and technology brings rapid changes to the media landscape, the value of media dependency theory in a disaster context comes from its ability to identify dependency goals, or individual reasons for changes in degree of dependency on media. While individual goals can vary greatly among populations, dependency studies typically focus on the three main goals of understanding, orientation, and play (DeFleur & Ball-Rokeach, 1989; Loges, 1994). In this context, the goal of understanding primarily has to do with obtaining information. The goal of orientation deals with acquiring a guide or direction for behaviors. The goal of play can be interpreted primarily as escape or fun and relaxation.

Along with the front-end use of specific media, dependency theory can be deployed to gain an understanding of the transition from media use to media effects. According to the framers of the theory, as a specific medium becomes a more dominant source for satisfying a person's needs, that medium becomes more trusted and influential (Ball-Rokeach & DeFleur, 1976). It can be reasoned that more trusted and influential media are more likely to have a direct impact on decision-making, behaviors, and understanding during a crisis, making it all the more important to understand which channels are being used and why.

Because the results from previous disaster and crisis research in regard to media use have been mixed, this study will be exploratory in nature. Described in more detail in the Methods

section, the survey used in this study will prompt participants to think of the last time they were affected by severe weather, which will bring to mind different experiences for different people. The main concern of this study is how media use, dependency, and gratifications sought change from peoples' normal habits over the course of the early stages of a severe weather event, specifically the preparation and impact phases.

The following research questions are proposed for study:

RQ1: How does media use change throughout the early stages of a severe weather event?

RQ2: How does media dependency change throughout the early stages of a severe weather event?

RQ3: What gratifications are sought by the audience in the early stages of a severe weather event?

## CHAPTER 3

### METHOD

#### *Sample*

To answer the research questions of this study, a 22-item survey (Appendix A) was built using the Qualtrics platform and distributed online. Two samples were used to collect data. After a series of one-way repeated measures ANOVA tests revealed no significant differences in findings between the two groups, both samples were combined in a single dataset. Responses that failed an attention check or indicated they had no experience with severe weather were filtered out of the dataset.

Sample 1 consisted of 189 valid responses collected via the Amazon Mechanical Turk system. Respondents anywhere in the United States could participate in the survey, and were compensated \$1 for their participation. In Sample 1, most respondents were 25-34 years old ( $n=81$ , 42.9%), followed by people ages 35-44 ( $n=59$ , 31.2%), 45-54 ( $n=19$ , 10.1%), 18-24 ( $n=18$ , 9.5%), 55-64 ( $n=8$ , 4.2%), and 65 or older ( $n=4$ , 2.1%). The majority of respondents were white ( $n=160$ , 84.7%) followed by African American ( $n=19$ , 10.1%), Asian ( $n=6$ , 3.2%), and Other ( $n=3$ , 1.6%). The sample included a comparable proportion of males ( $n=89$ , 47.1%) and females ( $n=97$ , 51.3%). Just over half ( $n=99$ , 52.4%) indicated that they were parents or guardians.

Sample 2 consisted of 100 valid responses collected using the University of Alabama's Institute for Communication and Information Research student participant pool. The survey was open to students in the university's College of Communication and Information Sciences, and

participants received course credit for participating. In Sample 2, 100% of respondents were 18-24 years old. The majority self-identified as white, ( $n=91$ , 91%), followed by African American ( $n=5$ , 5%), and Other ( $n=4$ , 4%). Female respondents ( $n=79$ , 79%) outnumbered male respondents ( $n=21$ , 21%). None of the respondents indicated they were a parent or guardian.

Responses from the two samples were combined into a single dataset and analyzed using the SPSS software package. In terms of demographics, the final dataset included 41% of respondents who were 18 to 24 years of age ( $n=118$ ), 28% ages 25-34 ( $n=81$ ), and 20% ages 35-44 ( $n=59$ ). The sample was predominantly white, with 87 percent of respondents ( $n=251$ ), followed by African American ( $n=24$ , 8%), Other ( $n=7$ , 2%) and Asian ( $n=6$ , 2%). Women outnumbered men, as 61% of respondents were female ( $n=176$ ), compared to 38% who were male ( $n=110$ ). Finally, about one in three respondents ( $n=99$ , 34.4%) indicated that they were parents/guardians.

### *Procedure*

Respondents first encountered a consent statement in which they were provided general information concerning the type questions they might expect, the length of time the survey would require, and other procedural information. Once they consented, respondents were provided access to the online questionnaire that consisted of 22 items designed to answer the three research questions posed in this study. The survey used a series of 7-point Likert scales to gather information about participants' media use, gratifications sought, and media dependency in three distinct scenarios that align with the early stages of a severe weather event (Maxwell, 2012). An open-ended question that prompted respondents to describe how they used media during a time they were affected by severe weather was included to gather qualitative data to provide context for quantitative data analysis. Demographic information was also collected as

part of this survey. These items are outlined in more detail below. Upon completing the questionnaire, respondents were thanked for their time and debriefed.

### *Measures*

To measure *media use*, respondents were presented with a list of 15 media forms and asked, “On a usual day, how often do you use the following media for news?” The media are outlined in the appendix. However, to illustrate, media included traditional outlets such as newspapers and magazines; broadcast outlets such as television and radio programs; and social media outlets, such as Facebook and Twitter. Participants then indicated on a 7-point Likert scale (1=Never, 7=All the Time) how much they used each media type on a normal day.

To measure *gratifications sought*, respondents were asked to indicate on a 7-point Likert scale (1=Disagree, 4=Neutral, 7=Agree) how much they agreed with the statement, “On a normal day, I use media...” with a list of 12 potential gratifications presented to complete the sentence. Items included phrases such as “...to find out what is going on in the world,” “...to share my views and opinions,” and “...to pass the time.” The items used were chosen to represent the wide array of potential gratifications based in previous research, which indicates most gratifications fall under the categories of cognitive, social, and entertainment (Katz, Blumler & Gurevitch 1973).

To measure *media dependency*, respondents were presented with the same list of 15 media types used in previous questions, but asked about *how helpful* they find each media type. Responses were recorded using a 7-point Likert scale (1=Not at All, 7=Very Much).

Respondents were then asked to think about a time when they were affected by severe weather. After questions about the event that came to mind (“Did you lose power?” “Did you lose Internet access?” “What type of event was it?”), respondents were asked the same series of

Likert-scale questions regarding use, gratifications sought, and dependency, but with prompts modified with the wording, “In the hours leading up to the event...” to indicate responses should reflect their media use in the preparation phase. Upon completion of this line of questioning, the process was repeated with prompts that used the wording “During/in the middle of that event...” to indicate responses should reflect their media use in the impact phase, or at the height of the event.

### *Analysis*

Data analysis was conducted using the SPSS software package. To answer the research questions of how media use, gratifications sought, and dependency change throughout the early stages of a severe weather event, a series of one-way repeated measures ANOVA tests were conducted. The three phases of a severe weather event – labeled Normal, Preparation, and Impact - served as the independent variable. The Likert-scale ratings of each media type or gratification served as the dependent variables. The tests were conducted for each media type and each potential gratification. The qualitative data obtained through the open-ended survey question provided additional context. It was analyzed by the researcher using a coding process that highlighted trends and common descriptions.

## CHAPTER 4

### RESULTS

#### *Descriptive Statistics*

Out of the 289 valid responses indicating they had previous experience with severe weather, 59.2 percent ( $n=171$ ) said they had been directly affected by severe weather, while 40.8 percent ( $n=118$ ) said their close friends or family members had been directly affected by severe weather. Regarding the type of severe weather event that they were affected by, 34.3 percent ( $n=99$ ) reported being affected by a hurricane, 23.9 percent ( $n=69$ ) said they were affected by a tornado, 23.2 percent ( $n=67$ ) selected a severe thunderstorm, 8% ( $n=24$ ) indicated blizzard, 3% indicated flood ( $n=9$ ), 2% marked wildfire ( $n=6$ ), and 1 person marked drought.

When asked to think about the specific severe weather event in mind, 74.4 percent ( $n=215$ ) of respondents said they lost power during the event, with 24.9 percent ( $n=72$ ) indicating they did not lose power. Similar to the numbers of those who lost power, 69.6 percent ( $n=201$ ) said they lost Internet access during the event, and 30.1 percent ( $n=87$ ) said they did not lose Internet access.

#### *Media Use*

The first research question in the study sought to explore how reported media use changes throughout the early stages of a severe weather event. To answer this question, one-way repeated measures ANOVA tests were run for each of the 15 media types listed, comparing the Likert-scale ratings in each of the three phases studied (See Table 1). In the transition from normal use to the preparation phase (the hours leading up to the event), TV News ( $p < .001$ ) and

Local Radio ( $p < .001$ ) saw significant increases in use. There was no significant change in use for Satellite Radio. All other media types saw a significant decrease in use between the normal and preparation phase of the event.

In the transition from the preparation phase to the impact phase (during/in the middle of/at the height of the event), TV News ( $p < .001$ ), Audio Podcast ( $p < .05$ ), Online News Website or App ( $p < .001$ ), Late Night Talk Shows ( $p < .05$ ), Facebook ( $p < .05$ ), Twitter ( $p < .01$ ), and Reddit ( $p < .01$ ) saw significant decreases in use. There was no statistically significant change in use for any other media type in the transition from the preparation phase to the impact phase of the severe weather event. These results will be further examined in the discussion section.

Table 1

**Mean Likert-Scale Ratings of Media Use**

<b>Media Types</b>	<b>Normal (SD)</b>	<b>Preparation Phase (SD)</b>	<b>Impact Phase(SD)</b>	<b>Wilk's Lambda</b>	<b>Partial Eta^2</b>
TV News	3.57 (1.974)	*** <b>5.01</b> (2.199)	*** <b>4.20</b> (2.461)	0.688	0.312
Local Radio	2.33 (1.553)	*** <b>3.40</b> (2.282)	3.42 (2.371)	0.801	0.199
Satellite Radio	1.82 (1.375)	*** <b>1.93</b> (1.716)	<b>*1.85</b> (1.709)	0.993	0.007
Audio Podcast	1.97 (1.580)	*** <b>1.45</b> (1.168)	1.30 (0.875)	0.809	0.191
Newspaper	2.27 (1.633)	*** <b>1.79</b> (1.559)	1.60 (1.321)	0.846	0.154
Magazine	1.97 (1.420)	*** <b>1.46</b> (1.191)	1.42 1.096)	0.813	0.187
Online News Site or App	5.54 (1.555)	** <b>5.17</b> (2.100)	*** <b>4.24</b> (2.477)	0.770	0.230
Late Night Talk Shows	2.99 (1.904)	*** <b>1.65</b> (1.358)	<b>*1.48</b> (1.204)	0.599	0.401
Facebook	4.40 (2.208)	*** <b>3.96</b> (2.375)	<b>*3.70</b> (2.438)	0.903	0.097
Twitter	3.58 (2.306)	** <b>3.27</b> (2.415)	** <b>2.98</b> (2.426)	0.911	0.089
YouTube	3.07 (2.129)	*** <b>2.04</b> (1.819)	1.91 (1.744)	0.744	0.256
Snapchat	2.72 (2.249)	*** <b>2.18</b> (1.998)	2.08 (1.947)	0.877	0.123
Instagram	2.89 (2.323)	*** <b>2.15</b> (1.946)	2.00 (1.863)	0.818	0.182
Reddit	2.89 (2.185)	*** <b>1.91</b> (1.785)	** <b>1.70</b> (1.537)	0.713	0.287
Other	1.88 (1.612)	1.73 (1.571)	1.61 (1.457)	0.972	0.028

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$  statistically significant change from previous phase

Partial Eta Squared: Commonly used guidelines for effect size, .01=small, .06=moderate, .14=large (Cohen, 1998)

A follow-up set of one-way repeated measures ANOVA tests was conducted for the five most used media types in the preparation and impact phases. The follow-up tests were conducted using a subset of participants that reported they did not lose power during the event ( $n=72$ ) and again using a subset of participants who indicated they did not lose Internet access during the event ( $n=87$ ). In both subgroups, results showed a significant increase in use of TV News in the preparation phase ( $p < .001$ ), but no significant change from the preparation phase to the impact phase. Also in both subgroups, there was a gradual increase in use of local radio, resulting in a statistically significant difference between normal use and the impact phase ( $p < .05$ ). For those who never lost power or Internet access during the severe weather event, there was no significant change in use of Online News Sites or Apps, Facebook, and Twitter.

Table 2

**Mean Likert-Scale Ratings of Media Use  
(Among Participants Who Did Not Lose Power)**

<b>Media Types</b>	<b>Normal (SD)</b>	<b>Preparation Phase (SD)</b>	<b>Impact Phase(SD)</b>	<b>Wilk's Lambda</b>	<b>Partial Eta^2</b>
TV News	3.61 (2.155)	***4.75 (2.297)	4.85 (2.208)	0.732	0.268
Local Radio	2.17 (1.318)	2.60 (2.024)	2.77 (2.155)	0.917	0.083
Online News Site or App	5.61 (1.563)	5.35 (2.125)	5.17 (2.217)	0.952	0.048
Facebook	4.42 (2.088)	4.27 (2.311)	4.52 (2.150)	0.963	0.037
Twitter	3.68 (2.401)	3.28 (2.386)	3.18 (2.440)	0.925	0.075

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$  statistically significant change from previous phase

Partial Eta Squared: Commonly used guidelines for effect size, .01=small, .06=moderate, .14=large (Cohen, 1998)

Table 3

**Mean Likert-Scale Ratings of Media Use  
(Among Participants Who Did Not Lose Internet Access)**

<b>Media Types</b>	<b>Normal (SD)</b>	<b>Preparation Phase (SD)</b>	<b>Impact Phase(SD)</b>	<b>Wilk's Lambda</b>	<b>Partial Eta^2</b>
TV News	3.38 (2.093)	***4.77 (2.330)	4.88 (2.204)	0.692	0.308
Local Radio	2.07 (1.298)	2.54 (1.991)	2.79 (2.274)	0.906	0.094
Online News Site or App	5.80 (1.462)	5.55 (2.033)	5.34 (2.183)	0.947	0.053
Facebook	4.49 (2.157)	4.24 (2.396)	4.43 (2.242)	0.978	0.022
Twitter	3.88 (2.480)	3.74 (2.540)	3.49 (2.552)	0.938	0.062

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$  statistically significant change from previous phase

Partial Eta Squared: Commonly used guidelines for effect size, .01=small, .06=moderate, .14=large (Cohen, 1998)

### *Media Dependency*

RQ2 in the study sought to explore how media dependency changes throughout the early stages of a severe weather event. To answer this question, a series of one-way repeated measures ANOVA tests were conducted to examine the change in respondents' Likert-scale rankings of how helpful various media types were for news in a normal setting, the preparation phase, and the impact phase of a severe weather event (See Table 3). Results in the transition from normal dependency and dependency in the preparation phase mirrored the media use results. Much like the media use results, TV News ( $p < .001$ ) and Local Radio ( $p < .001$ ) were the only two media types that showed a significant increase in dependency between a normal setting and the preparation phase. Results show a significant decrease in dependency on nearly all other media types (excluding Facebook,  $p = 1.000$ ; Satellite Radio,  $p = .052$ ) during the transition to the preparation phase. In the following transition from the preparation phase to the impact phase, results showed a significant decrease in dependency on TV News ( $p < .001$ ), Newspaper ( $p < .05$ ), Online News Websites or Apps ( $p < .001$ ), Late Night Talk Shows ( $p = .05$ ), Facebook ( $p < .01$ ), Twitter ( $p < .01$ ), and Reddit ( $p = .001$ ). There was no statistically significant change in dependency on the other media types in the transition from the preparation phase to the impact phase.

Table 4

**Mean Likert-Scale Ratings of Media Dependency**

<b>Media Types</b>	Normal (SD)	Preparation Phase (SD)	Impact Phase (SD)	Wilk's Lambda	Partial Eta <sup>2</sup>
TV News	4.20 (2.050)	<b>***5.43</b> (2.026)	<b>***4.53</b> (2.513)	0.691	0.309
Local Radio	3.06 (1.827)	<b>***3.87</b> (2.358)	3.80 (2.490)	0.890	0.110
Satellite Radio	2.43 (1.726)	2.16 (1.964)	2.03 (1.863)	0.957	0.043
Audio Podcast	2.44 (1.746)	<b>***1.48</b> (1.145)	1.50 (1.233)	0.727	0.273
Newspaper	3.24 (1.876)	<b>***2.01</b> (1.765)	<b>*1.81</b> (1.595)	0.643	0.357
Magazine	2.45 (1.647)	<b>***1.58</b> (1.297)	1.47 (1.170)	0.708	0.292
Online News Site or App	5.65 (1.535)	<b>***5.12</b> (2.214)	<b>***4.53</b> (2.440)	0.826	0.174
Late Night Talk Shows	3.27 (1.891)	<b>***1.67</b> (1.431)	<b>*1.52</b> (1.223)	0.539	0.461
Facebook	4.21 (2.117)	4.23 (2.338)	<b>**3.87</b> (2.403)	0.957	0.043
Twitter	3.82 (2.259)	<b>***3.38</b> (2.466)	<b>**3.12</b> (2.408)	0.880	0.120
YouTube	2.96 (1.982)	<b>***2.04</b> (1.768)	1.92 (1.728)	0.760	0.240
Snapchat	2.57 (2.052)	<b>***2.10</b> (1.904)	2.03 (1.888)	0.893	0.107
Instagram	2.63 (2.087)	<b>***2.07</b> (1.903)	1.97 (1.822)	0.868	0.132
Reddit	3.12 (2.230)	<b>***2.00</b> (1.833)	<b>**1.78</b> (1.678)	0.702	0.298
Other	1.89 (1.563)	1.69 (1.545)	1.59 (1.459)	0.961	0.039

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$  statistically significant change from previous phase

Partial Eta Squared: Commonly used guidelines for effect size; .01=small, .06=moderate, .14=large (Cohen, 1998)

### *Gratifications*

The third and final research question in the study sought to explore what gratifications are sought by media users throughout the early stages of a severe weather event. To measure this, a series of one-way repeated measures ANOVA tests were run to compare respondents' Likert-scale ratings of various statements about why they use media in each of the three phases pertinent to this study. Initially, the ANOVA tests were conducted using three variables computed by grouping four related gratifications into the Cognitive, Social, and Entertainment categories. The computed variables for Social and Entertainment gratifications exceeded the required Cronbach' Alpha validity score of .80 to be considered valid measures. The computed variable for Cognitive gratifications did not meet this threshold, so comparative analysis had to be conducted using the 12 individual gratifications themselves rather than the consolidated variables.

A series of one-way repeated measures ANOVA tests using the 12 potential gratifications revealed several significant results (See Table 4). From normal use to the preparation phase, the gratifications of "To understand events going on around me" ( $p = .005$ ) and "To let friends and family know my situation" ( $p < .001$ ) both significantly increased in prevalence. There was no statistically significant change found for "To find out how friends and family are doing" and "To share important information with others" during the initial transition. Results indicated Likert-scale ratings for all other gratifications significantly decreased from normal use to the preparation phase. In the transition from the preparation phase to the impact phase, a statistically significant decrease in Likert-scale ratings was found for all potential gratifications, except for "To let friends and family know my situation," "To find out how my friends and family are

doing,” “To share information with others,” and “To pass the time,” which did not significantly change in the transition from preparation phase to impact phase.

Table 5

**Mean Likert-Scale Ratings of Gratifications Sought**

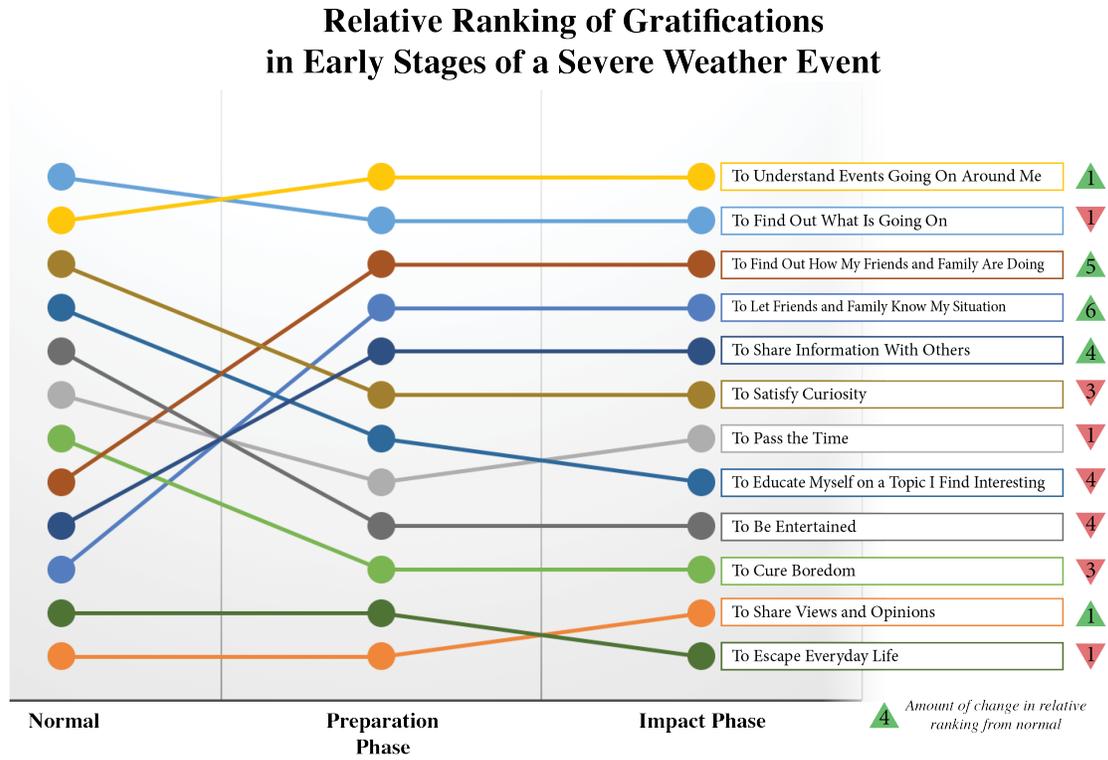
"I use media..."	Normal (SD)	Preparation Phase (SD)	Impact Phase(SD)	Wilk's Lambda	Partial Eta <sup>2</sup>
To Find out What is Going On	5.74 (1.418)	<b>*5.45</b> (1.840)	<b>**5.10</b> (2.195)	0.929	0.071
To Share Views and Opinions	3.66 (1.916)	<b>***2.75</b> (1.930)	2.73 (2.126)	0.780	0.220
To Pass the Time	5.32 (1.645)	<b>***3.50</b> (2.087)	3.31 (2.194)	0.512	0.488
To Understand Events Going on Around Me	5.62 (1.305)	<b>**5.91</b> (1.585)	<b>**5.57</b> (1.916)	0.947	0.053
To Let Friends and Family Know My Situation	4.24 (2.010)	<b>***4.67</b> (2.095)	4.45 (2.347)	0.945	0.055
To Cure Boredom	5.00 (1.879)	<b>***3.32</b> (2.160)	<b>***2.94</b> (2.143)	0.534	0.466
To Educate Myself on a Topic I Find Interesting	5.60 (1.330)	<b>***4.05</b> (2.096)	<b>***3.27</b> (2.210)	0.510	0.490
To Find Out How Friends and Family Are Doing	4.87 (1.916)	4.87 (2.135)	4.77 (2.355)	0.996	0.004
To Be Entertained	5.53 (1.550)	<b>***3.47</b> (2.117)	<b>***3.01</b> (2.182)	0.443	0.557
To Satisfy Curiosity	5.62 (1.358)	<b>***4.41</b> (2.084)	<b>***3.63</b> (2.246)	0.558	0.442
To Share Important Information with Others	4.30 (1.881)	4.55 (2.149)	4.29 (2.366)	0.974	0.022
To Escape Everyday Life	4.08 (1.904)	<b>***2.86</b> (1.947)	<b>***2.50</b> (1.980)	0.656	0.344

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$  statistically significant change from previous phase

Partial Eta Squared: Commonly used guidelines for effect size; .01=small, .06=moderate, .14=large (Cohen, 1998)

The mean Likert-scale ratings of gratifications were compared and assigned rankings scores from 1-12 to compare relative importance throughout the three phases pertinent to this study. Results from the rankings revealed a discrepancy between the cognitive gratifications that may have contributed to the low reliability scores for the computed variable. Comparing the mean scores revealed that “To understand events going on around me” and “To find out what is going on” topped the list of gratifications sought throughout the three phases studied. The remaining two cognitive gratifications, “To satisfy curiosity” and “To educate myself on a topic I find interesting,” both dropped to fifth and seventh in the rankings, respectively, over the course of the three phases (See Figure 1).

Figure 1



### *Qualitative Responses*

A pool of responses ( $n=97$ ) to the open-ended question asking respondents to describe the time they were affected by severe weather was analyzed by the researcher to reveal common themes. The most common theme reported in the open-ended responses was a change in media use based on power outages and access to the Internet. Another commonly reported behavior was an overall decrease in media use in the impact stage due to shelter-seeking. Several selections from the responses are provided below:

“At the beginning we waited for updates on the TV but once we had to leave we were using our phones and the radio to keep us aware of the changing situation.”

“I was affected by an ice storm a couple winters ago in Lansing, Michigan. My neighborhood lost power for about four days but used my phone for news on twitter and articles and then went to the gym where they had power to watch TV news there.”

“We lost power in the middle of the night and it didn’t return for 5 days after that. The news stations were very helpful in providing what was still open and available and media like Facebook was instrumental in being able to talk to family and neighbors as phone lines were down for a day or two.”

## CHAPTER 5

### DISCUSSION

This study sought to explore how media use, dependency, and gratification seeking change as people experience the preparation and impact phases of a severe weather event. The results of the study provide statistically significant evidence that people who are affected by severe weather change their media use, dependency on various media types, and gratifications sought. Results in each area of interest are discussed in further detail below, along with several notable findings and a proposed model. Limitations and areas for further research are also discussed.

#### *Media Use*

Results from the ANOVA tests of Likert-scale ratings revealed that as people transition from their normal routine to the preparation phase of a severe weather event, media use decreases for almost all types of media. Use of TV news and local radio, however, significantly increases during that time. This finding seems incongruous with some previous research in the field (American Red Cross, 2012; Lev-On, 2012; Maxwell, 2012), which found that people tend to use more media during a natural disaster. One possible explanation for this discrepancy is that by asking individuals to think of a time they were affected by severe weather, the most extreme example may have come to mind for the participants of this study. This may have led to individuals thinking about a time when they were *most* affected by severe weather, meaning that they might have thought of a time when they lost power or Internet access and couldn't use other forms of media as much as they would normally. This explanation of extremity bias in the

sample is supported by the fact that over 74 percent of the respondents indicated that they lost power, and nearly 70 percent said they lost Internet access during the event that came to mind. As will be discussed in a later section, results show the two highest-rated gratifications sought as a severe weather event develops are “To find out what is going on around me” and “To find out what is going on.” Based on the qualitative responses recorded in the survey, participants tended to turn to television news and local radio in the preparation phase to gain information about the event. Once the situation developed fully, however, participants indicated across the board that their overall media use decreased (except for local radio, which was the only media type to see an increase in use from the preparation phase to the impact phase, although it did not attain statistical significance). Many respondents indicated in their open-ended responses that they used their chosen forms of media up until they lost power or Internet access.

### *Media Dependency*

The results used to answer RQ2 of the study relating to media dependency revealed that media dependency through the preparation and impact phases nearly mirrored media use. Respondents showed a distinct increase in dependency on TV News and local radio in the initial transition to the preparation phase, and dependency levels for the two media types remained above normal levels through the impact phase as well. Respondents were significantly less dependent on almost every other media type through both event stages. One notable exception was Facebook, which respondents depended on in the preparation phase just as much as they do normally. It was not until the impact phase that there was a statistically significant decrease in dependency on Facebook. Once again, the standout gratifications can help answer why this occurred. The third- and fourth-ranked gratifications through the preparation and impact phases were “To find out how friends and family are doing” and “To let friends and family know my

situation.” Using Facebook to satisfy these needs makes sense because Facebook is a widely popular social network that has established itself as a reliable place to communicate with loved ones during a disaster. In recent years, Facebook instituted a feature that allows people in an affected area “Check in as Safe” publicly. Of course, having access to social networks like Facebook requires power and Internet access, so this must be taken into account for these findings, where the sample used saw nearly 75 percent of respondents indicating that they lost power and nearly 70 percent said they lost Internet access.

### *Gratifications Sought*

Some of the most nuanced information from this study comes from the results regarding the third research question about which gratifications are most sought in the different phases of a severe weather event. While the initial ANOVA tests using computed variables showed a significant decrease in all three types of gratifications (Cognitive, Social, Entertainment), the same tests using all 12 gratifications yielded much more variance. Based on the results of the study, there is a clearly distinguished set of gratifications that are more prevalent than others during a severe weather event. The gratifications of “To understand events going on around me,” “To find out what is going on,” “To find out how friends and family are doing,” “To let my friends and family know my situation,” and “To share important information with others,” consistently topped the Likert-scale rankings through the preparation and impact phases. At the bottom of the rankings were gratifications that had to do with non-essential social functions, like sharing views and opinions, or seemed to imply a presence of leisure time, such as curing boredom or learning something about an interesting topic. It can be inferred that most entertainment and escape functions of media become less important to people affected by a severe weather event because the event itself is somewhat of a distraction from everyday life,

and maintaining safety for the individual does not typically allow for much leisure time. As the relative rankings chart (Figure 1) illustrates, various gratifications that motivate media use change in their order of saliency. This does not necessarily mean, however, that the salience of each gratification is increasing or decreasing on its own. In a disaster situation, what is most likely happening is a decrease in saliency and relevancy for those gratifications that are entertainment oriented or dependent on the availability of leisure time.

### *The importance of power and Internet access*

A review of the open-ended responses provided by the participants of this study revealed a common narrative that provides useful context to the quantitative data demonstrating the importance of power and Internet access during the preparation and impact phases of a severe weather event. Many of the respondents said that they followed the developing situation by watching TV news, occasionally engaging in second-screening behavior by checking Facebook or Twitter simultaneously. It was a common theme that no matter the type of weather event, power and internet loss necessitated a change in media use. Many said they turned from TV news to listening for updates on local and satellite radio when the power went out by either turning on a battery-operated radio or in some cases sitting in an idling vehicle. Many also pointed out that they used mobile devices after the power went out to check social media or online news sites for updates until they either lost cell service or the mobile device battery died. Based on the information volunteered by participants and the follow-up tests showing a clear difference of experience between those who maintained power and internet access and those who didn't, it is clear that some of the most important factors distinguishing how people will experience an event and how they will change their media use throughout the event depends on whether they have power and Internet access.

### *Broadcast is King*

The results of the study show that in regard to media use and dependency in the early stages a severe weather event, broadcast media is king. In answering the first research question of this study about how media use changes from normal use through the preparation phase and impact phases of an event, respondents indicated a significant increase in use only for two media types: TV News and Local Radio. While this significant increase in use was only found for the preparation phase, both TV News and Local Radio had reported higher uses in the impact phase than normal. A similar result revealed itself in answering the second question about media dependency. Respondents reported that the only two media forms they relied on more as the severe weather event developed were TV News and Local Radio.

### *Evidence for a “Disaster Mode”*

One of the key characteristics of severe weather events is that whether or not they are physically destructive, they are disruptive to the goings on of everyday life. This thesis sheds light on how and why people use various forms of media during the early stages of a disruptive severe weather event. First and foremost, this study provides statistically significant evidence that demonstrates that media use, gratifications sought, and dependency change significantly when people are affected by severe weather. Looking into the results for a more detailed understanding of this change, the findings of this study indicate that most of the significant changes in media use, gratifications sought, and dependency on media occur in the hours leading up to the event, the preparation phase. The differences in use, gratifications sought, and dependency were less prevalent in the transition from the preparation phase to the impact phase, or at the height of the event when participants were most affected. This indicates that for the early stages of a severe weather event, people tend to enter a “Disaster Mode” of media

consumption and information-seeking. The commonalities between the use, gratifications, and dependency measures in this study suggest that a simple model can be proposed that demonstrates which media people will gravitate toward and why they choose to use media during a severe weather event. These are reflected in *Figure 2*.

Figure 2

**NORMAL**

**MEDIA USE & DEPENDENCY**  
Mixed bag, varies greatly between individuals

- Broadcast Media (Television, Radio)
- Social Media (Facebook, Twitter, Snapchat)
- Online News Sites/Apps
- Print Media (Magazine, Newspaper)
- Digital Media (YouTube, Podcasts)

**“DISASTER MODE”**

**MEDIA USE & DEPENDENCY**  
Stratifies, clear distinction of top media types

**MORE IMPORTANT**

- Local Radio
- TV News\*
- Online News Sites/Apps\*
- Facebook\*
- Twitter\*

**LESS IMPORTANT**

- Newspaper
- Magazine
- YouTube
- Audio Podcast
- Instagram
- Reddit

*\*Dependent on access to power and Internet*

**GRATIFICATIONS**  
Mixed bag, vary greatly, can be described by collapsing individual gratifications into groups

- Cognitive
- Social
- Entertainment

**GRATIFICATIONS**  
Stratify, clear distinction of top gratifications

**MORE IMPORTANT**

- To Understand Events Going on Around Me
- To Find Out What is Going On
- To Find Out How Friends and Family are Doing
- To Let Friends and Family Know My Situation
- To Share Important Information with Others

**LESS IMPORTANT**

- To Satisfy Curiosity
- To Pass the Time
- To Educate Myself on a Topic I Find Interesting
- To Be Entertained
- To Cure Boredom
- To Share Views and Opinions
- To Escape Everyday Life

### *Contributions to Practice and Theory*

This study contributes to the field of disaster communication in both practical and theoretical capacities. In practice, the findings of this study can be used to justify allocation of communication resources and tailoring of media messages throughout the preparation and impact phases based on the trends revealed in this study. This information is useful for government officials, emergency management officials, and community leaders looking to improve the effectiveness of their communications during severe weather events. When it comes to theory, this study demonstrates the usefulness of the uses and gratifications approach to studying audience behavior and decision-making. Furthermore, this study shows how uses and gratifications can be deployed in tandem with media dependency theory to better understand how gratifications sought motivate media use based on environmental disruptions.

### *Limitations and Directions for Future Research*

The study presented has several limitations that must be taken into account when discussing the validity of the findings. For example, the sample size for this survey was relatively small (N=289) compared to many other quantitative studies in the field. Along those lines, the sample used was heavily weighted in terms of demographics. Most of the participants in this study were young, white females. More solid conclusions could be drawn from a similar study that uses a larger, more diverse sample. Beyond the sampling used for this study, the data analysis employed by the researcher was relatively simple. Future researchers could use more sophisticated data analysis techniques that might be able to answer more specific questions beyond the scope of the research questions explored in this study. One such area of future study could focus on the amount of time spent using media, rather than just the different types of media

used. As with many uses and gratifications studies in this field, it must be mentioned that the results presented depend on the subjects' ability to recall their information-seeking behaviors. Future study that does not rely so heavily on memory could be deployed immediately after a specific event to avoid any memory bias in the results.

With the limitations taken into account, this study opens the door for a wide variety of future research in the field of user-oriented disaster communications. By expanding this study to include the response, recovery, and mitigation phases of disaster, researchers would be able to map out media use, dependency, and gratifications sought throughout the entire process, rather than just the early stages of a severe weather event. A modification of this study could focus on the hardware used to consume media and how ownership of smartphones, weather radios, and gas-powered generators affect what information sources are available to individuals. Furthermore, differences in information-seeking behavior between parents and non-parents, home-owners and renters, and among age groups could be studied in more detail using a structure similar to this study.

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**APPENDIX**

Q1 On a usual day, how often do you use the following media for news?

	1 = Never (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = All the Time (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps (Including TV news websites) (7)	<input type="radio"/>						
Late Night Talk Shows (Stephen Colbert/The Tonight Show with Jimmy Fallon/Last Week Tonight with John Oliver/The Daily Show) (8)	<input type="radio"/>						

Facebook (9)	<input type="radio"/>						
Twitter (10)	<input type="radio"/>						
Youtube (11)	<input type="radio"/>						
Snapchat (12)	<input type="radio"/>						
Instagram (13)	<input type="radio"/>						
Reddit (14)	<input type="radio"/>						
Other (15)	<input type="radio"/>						

Q2 Please indicate how much you agree with the following statement: **"On a normal day, I use media..."**

	1 = Disagree (1)	2 (2)	3 (3)	4 = Neutral (4)	5 (5)	6 (6)	7 = Agree (7)
to find out what is going on in the world (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to share my views and opinions (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to pass the time (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

to understand events that are going on around me (4)

to let my family and friends know my recent situation (5)

to cure boredom (6)

to educate myself on a topic I find interesting (7)

to find out how my friends and family are doing (8)

to be entertained (9)

to satisfy my curiosity (10)

to share important information with others (11)

to escape  
from  
everyday  
life (12)

Q3 On a usual day, how helpful is the following media for news?

	1 = Not at All (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = Very Much (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps (Including TV news websites) (7)	<input type="radio"/>						
Late Night Talk Shows (Stephen Colbert/The Tonight Show with Jimmy Fallon/Last Week Tonight with John Oliver/The	<input type="radio"/>						

Daily Show) (8)							
Facebook (9)	<input type="radio"/>						
Twitter (10)	<input type="radio"/>						
Youtube (11)	<input type="radio"/>						
Snapchat (12)	<input type="radio"/>						
Instagram (13)	<input type="radio"/>						
Reddit (14)	<input type="radio"/>						
Other (15)	<input type="radio"/>						

Q4 What is your experience with severe weather events?

- I have been directly affected by severe weather. (1)
- My close friends/family members have been directly affected by severe weather. (2)
- I have no experience with severe weather. (3)

*Skip To: Q18 If Q4 = I have no experience with severe weather. (3)*

Page Break

Q5 Take this time to think about the last time you were directly affected by a severe weather event. For the purposes of this study, a severe weather event is a time when your day-to-day was

disrupted by some type of hazardous weather. For the following questions, think about how you used media during the hours leading up to that event.

Q6 What type of severe weather event came to mind?

- Severe Thunderstorm (1)
- Tornado (2)
- Hurricane (3)
- Blizzard (4)
- Ice Storm (5)
- Drought (6)
- Flood (7)
- Wildfire (8)

Q7 Did you lose power during this event?

- Yes (1)
- No (2)

Q8 Did you lose internet access during this event?

- Yes (1)
- No (2)

Page Break

Q9 Thinking back to the hours leading up to that severe weather event, how often did you use the following media for news about the event?

	1 = Never (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = All the Time (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps (Including TV news websites) (7)	<input type="radio"/>						
Late Night Talk Shows (Stephen Colbert/The Tonight Show with Jimmy Fallon/Last Week Tonight with John Oliver/The Daily Show) (8)	<input type="radio"/>						

Facebook (9)	<input type="radio"/>						
Twitter (10)	<input type="radio"/>						
Youtube (11)	<input type="radio"/>						
Snapchat (12)	<input type="radio"/>						
Instagram (13)	<input type="radio"/>						
Reddit (14)	<input type="radio"/>						
Other (15)	<input type="radio"/>						

Q10 Please indicate how much you agree with the following statement: **"In the hours leading up to that severe weather event, I used media..."**

	1 = Disagree (1)	2 (2)	3 (3)	4 = Neutral (4)	5 (5)	6 (6)	7 = Agree (7)
to find out what is going on in the world (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to share my views and opinions (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
to pass the time (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

to understand events that are going on around me (4)

to let my family and friends know my recent situation (5)

to cure boredom (6)

to educate myself on a topic I find interesting (7)

to find out how my friends and family are doing (8)

to be entertained (9)

to satisfy my curiosity (10)

to share important information with others (11)

to escape  
from  
everyday  
life (12)

Q11 Thinking back to the hours leading up to that severe weather event, how helpful was the following media for news about the event?

	1 = Not at All (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = Very Much (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps (Including TV news websites) (7)	<input type="radio"/>						
Late Night Talk Shows (Stephen Colbert/The Tonight Show with Jimmy Fallon/Last	<input type="radio"/>						

Week Tonight  
with John  
Oliver/The  
Daily Show)  
(8)

Facebook (9)

Twitter (10)

Youtube (11)

Snapchat (12)

Instagram (13)

Reddit (14)

Other (15)

Q12 We have to make sure respondents are paying attention. Please choose the selection that is a form of print media.

Facebook (1)

Twitter (2)

Snapchat (3)

Newspaper (4)

Instagram (5)

Q13 For the next few questions, please think back to the last time you affected by a severe weather event. Think about how you used media as the event was occurring, reaching its most severe point or when it affected you the most. (If you are uncomfortable answering questions about the topic, you are free to exit this survey at any time.)

Q14 Thinking back to that severe weather event, how often did you use the following media for news during/in the middle of that event?

	1 = Never (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = All the Time (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps (Including TV news websites) (7)	<input type="radio"/>						
Late Night Talk Shows (Stephen	<input type="radio"/>						

Colbert/The  
Tonight Show  
with Jimmy  
Fallon/Last  
Week Tonight  
with John  
Oliver/The  
Daily Show)  
(8)

Facebook (9)

Twitter (10)

Youtube (11)

Snapchat (12)

Instagram (13)

Reddit (14)

Other (15)

<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							

Q15 Please indicate how much you agree with the following statement: **"During/in the middle of that event, I used media..."**

	1 = Disagree (1)	2 (2)	3 (3)	4 = Neutral (4)	5 (5)	6 (6)	7 = Agree (7)
to find out what is going on in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

the world  
(1)

to share my  
views and  
opinions  
(2)

to pass the  
time (3)

to  
understand  
events that  
are going  
on around  
me (4)

to let my  
family and  
friends  
know my  
recent  
situation  
(5)

to cure  
boredom  
(6)

to educate  
myself on a  
topic I find  
interesting  
(7)

to find out  
how my  
friends and  
family are  
doing (8)

to be  
entertained  
(9)

<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						
<input type="radio"/>						

to satisfy my curiosity (10)	<input type="radio"/>						
to share important information with others (11)	<input type="radio"/>						
to escape from everyday life (12)	<input type="radio"/>						

Q16 Thinking back to that severe weather event, how helpful was the following media for news during/in the middle of the event?

	1 = Not at All (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = Very Much (7)
Television News (1)	<input type="radio"/>						
Local Radio (2)	<input type="radio"/>						
Satellite Radio (3)	<input type="radio"/>						
Audio Podcast (4)	<input type="radio"/>						
Newspaper (5)	<input type="radio"/>						
Magazine (6)	<input type="radio"/>						
Online News Websites/Apps	<input type="radio"/>						

(Including TV news websites) (7)

Late Night Talk Shows (Stephen Colbert/The Tonight Show with Jimmy Fallon/Last Week Tonight with John Oliver/The Daily Show) (8)

Facebook (9)

Twitter (10)

Youtube (11)

Snapchat (12)

Instagram (13)

Reddit (14)

Other (15)

<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
<input type="radio"/>							
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Page Break

Q17 Thank you for your answers so far. For this final weather-related question, please describe (in as much detail as you are comfortable providing) the time you were affected by a severe weather event and how you used media for news.

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Page Break

Q18 What is your age?

- 18 - 24 (1)
- 25 - 34 (2)
- 35 - 44 (3)
- 45 - 54 (4)
- 55 - 64 (5)
- 65 or older (6)

Q19 What is your ethnicity?

- White (1)
- Black or African American (2)
- American Indian or Alaska Native (3)
- Asian (4)
- Native Hawaiian or Pacific Islander (5)

Other (6)

Q20 What is your gender?

Male (1)

Female (2)

Fill in the Blank (3) \_\_\_\_\_

Q21 Are you a parent or a guardian?

Yes (1)

No (2)

Q22 Are you a US Citizen?

Yes (1)

No (2)

**End of Block: Default Question Block**

September 22, 2017

Christopher Edmunds  
Dept. of Journalism  
CCIS  
Box 870172

Re: IRB#: 17-OR-321 "Understanding Media Use During Severe Weather Events"

Dear Mr. Edmunds:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of written documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on September 21, 2018. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Please use reproductions of the IRB approved stamped consent form to provide to your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Carpantato T. Myles, MSM, CIM, CIP  
Director & Research Compliance Officer