Weathercasters in Local Television News:

A Qualitative Case Study of Culture and Technology

in a Large U.S. Broadcasting Market During the Monsoon

by

Steven P. Garry

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Graduate Supervisory Committee:

B. William Silcock, Chair
Donald G. Godfrey
John E. Craft
Wilhelmina C. Savenye

ARIZONA STATE UNIVERSITY

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ABSTRACT

This is a case study of weathercasters in a large U.S. television market from five different English speaking stations conducted before, during, and after a severe weather season. The research applies the ethnographic process to inscribe and define the culture of local weathercasters in the news environment. The purpose of this study is to examine the extant cultural characteristics discerned by weathercasters and the changes in weather broadcast technology used by live "on-air" television personnel. Forty-nine elite, in depth interviews with 17 different weathercasters along with participant and non-participant observation yielded transcripts and field notes obtained during the six month data acquisition phase. Using qualitative methods and the CAQDAS program Dedoose, 953 coded excerpts from the transcripts were analyzed for various patterns, behaviors, and characteristics relevant to culture, technology, and perceptions of weathercasters. The excerpts revealed dominant cultural aspects defined as dichotomous differences, autonomous functions, and identity perceptions. Socio-technical models are explicated in relationship to control, knowledge, and strategic coping mechanisms. The newsroom and weathercaster co-cultural context is defined by the conformity versus autonomy relationship and the external and internal structure of the weathercaster's working environment is delineated. Co-cultural models explain the way influence operates in severe weather situations within the newsroom culture. The results have utility for scholars studying technology, culture, newsroom routines, rituals, and professionals who work in the television news industry. The findings are highly relevant for television weathercasters, newsroom producers, and broadcast managers.

DEDICATION

To the future of weathercasters, be it nebulous and even perilous at times, the everyday television weathercaster surmounts obstacles both seen and unseen. May this research study aid them in their journey and give them a greater understanding of how to endure through the storms of not only severe weather but technological change. Additional dedication is given to all those who labor so diligently in the newsroom, and to those who engage the noble profession of educating.

ACKNOWLEDGMENTS

I have read and reviewed many other dissertation acknowledgment pages in an effort to figure out how to say just the right thing for those special people in my life. Additionally, I found various quotes that I thought might adeptly express my appreciation and gratitude to those who have enabled my progress on the path to finishing this project, but none of the previous dissertation acknowledgments or written quotes captures the immense thankfulness felt for you. You know who you are, each one of you who have given me your time, your insights, your keen thoughts, critiques and feedback. Hopefully my most sincere and heart felt emotions are communicated to you, if not with this acknowledgment then by way of personal, face-to-face communication.

I learned a phrase of endearment when I lived in Italy for two years, "ti voglio bene," which is similar to our English version of the phrase "I love you" but is less intimate and translates literally to "you I want good for," or as I see it, "I want the best for you." Thank you for being the best: the best family, the best PhD committee advisors, the best program and school for me. I will always be appreciative of all of your efforts and the great opportunity you have given me to climb the massive mountain - the PhD degree program - and obtain new knowledge.

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CHAPTER 1

INTRODUCTION

The *Project for Excellence in Journalism* (Pew Research Center, 2011) found that 89% of television viewers in the U.S. say they tuned in to local news to "watch the weather."[1] The age old quip from the late 19th century "everybody talks about the weather but nobody seems to do anything about it,"[2] is applicable now for a 2015 Pew study, *Local News in a Digital Age*, confirms the truism - weather is the prime topic of discussion; at least three-quarters of the respondents report they often discuss the weather with others and weather is the number one item on the list of topics discussed by viewers. The 2015 Pew findings also point out that local television ranks at the top as the source turned to for local weather.[3] Certainly the importance of local television weathercasting is regionally specific as some parts of the United States regularly experience severe weather (i.e., tornadoes, hurricanes, etc.) while other parts of the country have relatively benign weather during much of the year. Regardless of where one resides, the premise that weather is of high importance to local television news, especially during severe or breaking weather, is seen as foundational to this dissertation research (Sherman-Morris, 2005, 2013). This premise, albeit a weather centric one, connects to the initial impetus

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[1] The findings came from a survey administered from January 12-25, 2011 to a nationally-representative sample of 2,251 adults and had an overall margin of error of plus or minus 2 percentage points.

[2] This quote is often attributed to Mark Twain but it was Charles Dudley Warner, a friend of Twain's who first published it in an editorial in the *Hartford Courant of Connecticut* dated August 27, 1897.

[3] The 2015 findings came from three original public opinion surveys, involving metropolitan areas in the U.S. that reside in severe weather television markets - Denver, CO; Macon, GA; and Sioux City, IA.

for this study which was to increase ones understanding of the weathercaster in local

news and the rapidly changing technologies used in television weathercasting (i.e.,

primarily digital presentation and broadcast weathercasting technologies).

Even though the Pew studies indicate that viewers continue to watch

weathercasters, there are rapid technological changes pushing digital news and weather

content to multiple platforms such as mobile devices and the web (Pavlik, 2013). These

technologies allow parts of the audience, especially younger audiences (Bennett, Freelon,

Hussain & Wells, 2012), to have little interest in local broadcast television news as a

primary source for weather information. The developing digital news technologies create

fragmented audiences (Tewksbury, 2005). The 2011 Pew research pointed out that less

than half of viewers who are age 40 and under watch television for weather information

as compared to the 89% of all viewers who did watch news for weather. The Pew study

also noted that 41% of those who are age 40 and under use the Internet as their primary

source for weather information.[4] The movement of audience members from traditional

outlets (local television news) to digital formats for news and weather is a concern for

those on-air personnel employed in broadcasting. What do the weathercasters think of

the technological changes driving audience shifts and are they worried that their

livelihoods will be outsourced to new forms of digital delivery in the future? What are the

weathercasters' perceptions of past and present technological advancements? These are

two of the main technology questions driving this research but more profoundly there is a

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[4] A percentage that would most likely be higher if the survey included those younger than 18 years of age. The 2011 Pew survey only had responses from those who were age 18 and older and gathered results using both landline and cell phone feedback but not online feedback.

broader area of interest in this dissertation which is a desire to understand the culture of weathercasters.

What is "weathercaster culture" and can it be defined in a specific context or environment? How is weathercaster culture defined in relation to the newsroom? This dissertation aims to answer these questions as well by examining the culture of weathercasters in relationship to the changing technology used in television news weathercasting. Specifically, it utilizes a case study from Phoenix, Arizona, a large television market that has seasonal severe weather situations – the desert Monsoon. The Monsoon provides a contextual focal point for the study of culture and technology. Weathercasting technologies (i.e., radar, weather forecasting computers, and public warning systems) are put to the test when severe weather occurs and this is especially relevant for local television news. This case study was conducted during the severe weather events of the 2014 Monsoon – a time when both weather broadcasting technology and the importance of weathercasters were highlighted and emphasized.

Significance of the Study

The study has significance for the population of weather anchors, weathercasters, weather reporters, newsroom personnel (producers, writers, news directors and other managers) along with broadcasting and meteorology students. It will help television news related individuals better understand the culture of broadcast weather. Applications of the findings to other businesses (outside of television broadcast stations) can make a large impact on a wider group of people and will have educational, organizational, and managerial value as well.

The research contributes to a greater understanding of culture in the broadcasting area. Specifically, it advances studies concerning culture in the television newsroom (Bantz, McCorkle, & Baade, 1980; Gans, 1980; Robinson, 2011; Silcock, 2002, 2006) and in the weather broadcasting business. It also increases and advances an understanding of technological change in the working world of local television news. Adding to the literature on technology, showing how people organize around the technologies they employ, this study relates to previous technology studies that have focused on social interactions, interpretations, and behaviors (Barley, 1986; Fulk, 1993; Orlikowski, 1992, 2000; Robey & Sahay, 1996). This dissertation furthers a discussion about the future of outsourced news and weather products (Hood, 2014) and digital, virtual, and augmented reality (Pavlik & Bridges, 2013) in connection to weathercasting technologies. Finally, it discusses new forms of technology in relation to weathercaster culture. Studying the specialized work of weathercasters in conjunction with new technology during severe weather situations brings forth a significant amount of new data on this specific population -weathercasters.

Justification for the Study

The upcoming literature review indicates a dearth of qualitative research on weathercasters. This study begins to fill the void in the research and builds on the methodological scaffolding constructed by previous newsroom culture studies (Bantz et al., 1980; Gans, 1980; Silcock, 2002). It utilizes historical perspectives on technological advancements to examine new forms of virtual "digitally created" weathercasting. The digital technology is moving traditional television weathercasters toward the online world

with social media and web video updates. Given these rapid technological advancements

and the lack of published qualitative research on weathercaster culture it appears rational

to conduct a study that will yield new knowledge about the weathercaster.

CHAPTER 2

LITERATURE REVIEW

A comprehensive 2014 examination of peer-reviewed scholarly research articles published on weathercasters indicates that there are no qualitative studies of television weathercasters that specifically analyze or address the questions proposed in this dissertation. There is existing research literature, mainly quantitative and historical, on weathercasters and it can be organized into three areas. One prominent research area found in meteorological journals focuses on weathercasters as broadcast meteorologists. A second, more diffuse and broad area examines weathercasting technology which includes historical research of weathercasting along with emerging technologies. A third area, the culture of weathercasters, is indirectly reflected in a few published studies, but no direct studies of weathercaster culture have been found in the literature. All three of these areas are examined in this literature review shedding light on weathercasters, technology, and news culture.

Weathercasters as Broadcast Meteorologists

"While scholarly journals in journalism and communication have eschewed the study of television weathercasters, peer-reviewed journals in other disciplines have given the topic study, although few such papers have appeared recently" (Wilson, 2008, p.75). Extensive research in meteorology journals on weathercasters as science communicators has been done by Wilson (2002, 2006, 2008, 2009). Wilson used quantitative survey methods from American Meteorological Society (AMS) broadcast meteorologists to

examine the weathercasters' attitudes and beliefs about climate change and the debate over the value of informing the viewing population about climate change.[5] While highly relevant to the issue of global warming, the research does not fully take into account the perspectives of the weathercasters from extensive individual interviews. Nevertheless, Wilson does a considerable amount of groundbreaking work concerning the study of weathercasters and notes the background of scholarly literature found in this area.

The journal containing the majority of articles related to television weathercasting is the *Bulletin of the American Meteorological Society* (BAMS).[6] Since its inception there have been more than thirty articles about television weather in BAMS spanning the past sixty-five years. The earliest research relevant to this dissertation published in BAMS noted the importance of having a trained professional weathercaster (Beebe, 1970; Booker, 1962). The AMS touts the virtue of sealed and certified broadcast meteorologists, but no qualitative studies examining the thoughts, feelings and motivations of broadcast meteorologists concerning technology or the culture of the broadcast meteorologist have been reported in BAMS.

Articles through March 2014 in *BAMS* show only three (Robertson & Droegemeier, 1990; Wilson, 2009; Zhao et al., 2014) making a specific connection to television weathercasters and all three of those articles involved quantitative not qualitative research. Additionally, the term weathercaster culture was extensively searched and yielded just three results (Grenci, 2005; Voss, 2005; Perryman & Theiss,

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[5] The American Meteorological Society (AMS) is a private organization with more than 11,000 members who traverse a variety of disciplines (mainly the physical sciences) but also includes a division for broadcast meteorology.

[6] BAMS is a peer-reviewed scholarly journal published by the American Meteorological Society.

2013). While Grenci and Voss have no connection to the ideas in this dissertation

research, Perryman and Theiss relate to the concept of culture and specifically examine

the images of female weathercasters in pop culture. Additional research in the literature

focusing on the term weathercasting technology also brought forth similar results from

the *BAMS* publications with no specific qualitative research exploring technology and

culture. The lack of an interpretive and constructivist (Taber, 2011) approach in *BAMS*

would be expected as it is a quantitatively oriented publication but it also reinforces and

sustains the idea that the need for qualitative research about television weathercasters is

not met in the current literature as the empirical positivist quantitative research

perspective is the dominant paradigm.[7]

A review of *Journal of Broadcasting*, later titled *Journal of Broadcasting and

Electronic Media* showed only one scholarly article concerning television weathercasting

(Doherty & Barnhurst, 2009). Doherty and Barnhurst point out the way that

weathercasters report their weather by using banter and rhetorical claims to "control

nature." While this form of content analysis is insightful, it has not examined the

underlying reflective understandings, emotional thoughts and cognitive processes that

weathercasters incur while preparing and presenting their forecast, nor does it embody a

qualitative constructivist research perspective.

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[7] Onwuegbuzie and Leech (2005) point out that a debate between quantitative and
qualitative research paradigms is divisive and, hence, counterproductive for advancing
research. They encourage the development of *pragmatist researchers* (italics added for
emphasis) who are able to utilize both quantitative and qualitative techniques when
conducting research and to appreciate both quantitative and qualitative research
methodologies.

There were four articles published in *Journalism (and Mass Communication) Quarterly* (JQ) relating to weathercasting focusing on the accuracy of forecasts and the opinions and satisfaction of viewers, yet a direct study of weathercasters was not done in those earlier articles. A search including the *Journal of Communication* reviewing the period through March 2014 did not uncover any articles on weathercasters.   A complete search of the academic research journal *Electronic News* concerning weathercasters returned only four results with two of the four results being articles published by Wilson (2008, 2011) concerning "Communicating the Science of Hurricanes on TV" and how "Ideology Trumps Meteorology."   The other two articles made extraneous connections to weathercasting in relation to sports broadcasters (Hardin & Genovese, 2009) and broadcast news salaries (Papper, 2011).   These articles examined weathercasters with a quantitative approach and there was no direct relation to the research topics noted in this dissertation.

Finally, a content analysis study (Blue & Dupont, 2007) relating to broadcast meteorologists was found in the *Southwestern Mass Communication Journal* while conducting a final comprehensive search for the term meteorologist in the *Communication and Mass Media Complete* database. Blue and Dupont (2007) follow earlier content analysis work of weather forecasts done by Gantz (1982) and design their own content analysis to examine the data collected from local television newscasts during the 2004 Hurricane Ivan event in New Orleans. The findings indicate that there were a number of significant fear-inducing messages (i.e., "telestrator terrorism") and items were coded based on the required definitions of the fear-inducing message (i.e., no fear, low fear, medium fear, and high fear). The primarily quantitative research is informative

but more importantly the researcher conducted some qualitative research with follow-up interviews of the broadcast meteorologists after the event. "Two months after the coverage of Hurricane Ivan, on November 17, 2004, four of the city's eleven television meteorologists were questioned on their recollections of the coverage" (Blue & Dupont, p.75). These interviews referred to as "debriefings" by the authors, brought truthful, insightful information to the study and indicate the potential usefulness of qualitative interviewing methods in obtaining reflective meaningful data from television broadcast meteorologists.

Weathercasting Technology

While research concerning weathercasters and the use of weather technology in broadcast news has been extremely scarce in broadcasting and communication scholarly journals, there has been research about "on-air" television broadcast meteorologists in forecasting and historical works (Batton, 2002; Henson, 2010; Monmonier, 1999). The most prominent and definitive history book of weather broadcasting, *Weather on the Air: A History of Broadcast Meteorology,* written by Robert Henson in 1990 and updated with the second edition in 2010, is the first self-proclaimed "comprehensive" work of its kind. Ironically, the cover of Henson's work has a blurb which states… "In *Weather on the Air*, meteorologist and science journalist Robert Henson *covers it all* [italics added]—the people, technology, science, and show business that combine to deliver the weather to the public each day." The phrase "covers it all" is problematic for the book lacks a concerted focus on the early history of presentation technology in the field of television weather. Reviewer Greg Meyers (2011) noted,

Henson is not concerned with the conceptual background of his story, but historians of science will see issues that have concerned science studies in other contexts: the relations between science and the state, the role of economics and markets in new technologies, public understanding of risk, local versus national scope, and the demographics of the profession (p. 805).

While Henson's work is highly commendable, he misses the fine grained detail needed to fully understand the historical background of weather broadcasting technology. For example, his section on graphics is less than three pages of his 231 page book and it primarily focuses on the decade of the 1980s with nearly thirty years of prior weather broadcasting technology history being relegated to this single sentence. "After three decades of relatively primitive maps, many of them hand drawn, the look of the weathercast changed dramatically" (Henson, p. 12). While the graphics revolution of the 1980s was indeed the focal point of change in weather presentation technology, it was preceded by significant applications and technologies which, while primitive in nature, were indeed important to the advent of interactive presentation techniques.

Batten (2002) examines weather broadcasting describing one of the most historic events – the development of The Weather Channel. Batten's text intricately details the formation of a totally dedicated 24/7 weather channel but does not fully address the technological changes brought to television weather broadcasting. He does note some of the technological advancements, such as the movement from analog to digital, but it is lacking in qualitative research that presents the thoughts, emotions and feelings of weathercasters while interacting with and learning these new technologies.

Maps and graphics. The field of meteorology transects multiple disciplines from cartography to environmental studies and this diversity is also reflected in the literature. Carter (1988) examined the use of television maps and found that maps are an integral

part of our culture and in television weather they are evolving into a form of animated cartography. The design of these maps is part of the technical and creative aspect of the weathercasters' job, especially in the local television markets, and the cartographic product that gets developed is influenced by the visual demands of a broad range of viewers, consultants, and managers.

These forms of technology are organized into four types of weather programming in the U.S. They are: local, national, all-news, and all-weather. Each type of weather related programming contains its own type of maps. Carter does not address how the weathercasters make the maps and graphics or what they do to learn the technology and does not examine how weathercasters are interacting with the technology.

The "visual expressions" research noted by Fairbairn and Niroumand (2013) helps influence the visual design parameters of broadcast weather maps. Learning what works visually and what does not work takes time and feedback from consultants and focus groups along with technical training to get the weather computers (a system of computers – graphic engines, data ingest boxes, modeling and rendering programs) to produce a product of value and quality. According to Treadway (1995) the objective is to create the best weather product "on-the air" by using data from the National Weather Service (NWA). Treadway notes the types of technologies used in various broadcast markets such as Storm Tracker, Liveline V, Triton I-7, First Alert Warning Systems and NOWrad radar graphics systems. Systems such as Weather Central's custom Microcast forecast product allows individual television stations to make their own forecast model and not rely exclusively on NWA forecast data. While the names of these forecast products change over time (i.e., Futurecast and Microcast) so does the promise of a better

product, meaning that new technologies will bring better forecasting. For example, Mass (2012) explains how "nowcasting" uses model and satellite data to aid in forecasting development and movement. According to Mass this brings more accurate graphics and information to the screen allowing for greater protection of life and property as well as facilitating more commerce and recreation.

Sutter (2013) finds that television stations in markets with a higher incidence of severe weather make greater investments in their own weather radars and desire weathercasters certified by the American Meteorological Society. Since television weather helps save lives during severe weather, the economic and financial considerations of weather coverage become directed towards capital resources - acquisitions and expenditures (i.e., Doppler radar, storm chasing vehicles, etc.). While these studies explain the technologies, activities and applications (e.g., graphic map making, computer integration) that weathercasters engage in to present the weather they do not focus on the emerging culture evident in this world of technology.

Emerging technologies.   New technologies are revolutionizing the news business and the culture of television newsrooms and weathercasters. Studies done to understand these changes involve newsroom convergence (Silcock & Keith, 2006; Robinson, 2011) and the use of social media (i.e., Twitter) by Marwick and Boyd (2013). These studies indicate the rapid changes that are occurring not just in newsrooms but in family rooms where anyone with a webcam and Internet access can broadcast to the world.

Silcock and Keith (2006) studied convergence at two different locations (Phoenix, AZ and Tampa, FL) and found difficulties and successes at each. The merging of print

and broadcast newsrooms and the production that comes from these fairly new types of hybrid organizations is pertinent to culture for two reasons. First, of interest in their findings was that some organizations are more adept at integration than others as was the case at WFLA, which developed more of an open culture. At KPNX the process was more protracted and it was difficult to get sharing and meetings operating and working. Consequently, the Gannett convergence operated in a closed culture and created less desirable working conditions. Second, what was of most importance was the use of a central Internet site (azcentral.com). This allowed both print and broadcast journalists a "digital space" to unite and this appears to be the nexus for the future of both print and broadcast worlds. Robinson (2011) also found that convergence, as a result of emerging technologies, has brought forth more labor tensions in print organizations. He also noted that print journalists may feel more isolated in the new digital convergent environment as multimedia production - technology skills - and other online publishing skills take on a larger role.

Marwick and Boyd (2013) looked at the use of Twitter as a means for becoming a "micro celebrity." This new function of online social media allows individuals the ability to bypass the role which newsrooms were a large part of, namely reinforcing, promoting, and drawing attention to the existing names and images of the important, the famous, and those of celebrity status. Those whose names are important and significant are less controlled and dominated by journalists than before the advent of social media and new technology. Participants in the digital weather world (not just traditional on-air weather broadcasters but also independent individual weather forecasters, weather spotters, and storm chasers with webcams) take on greater freedom, control, and engage new forms of

technology along with online social media participation. No scholarly journal article studies have been found that examine current weathercasters' thoughts, views, and ideas on the use of these emerging technologies.

Digital weathercasters. Of interest to future weather presenters are the technological applications noted in the work of Bech, Molina, Vilaclara and Lorente (2010). The focus involved a case study at TVC, the public Television station of Catalonia, Spain. This area of Spain has been improving television weather broadcasts with technological advancements in two cases (radar and animated weather characters) that have been developed over the past 20 years. While the use and application of radar to weather presentations is important it is not nearly as revolutionary as the future of animated digital weathercasters. The researchers state that "the use of animated characters as weathercasters was the result of developing an advanced human-like interface accessing an already existing database fed automatically by NWP forecasts" (Bech et al., p.142).

Technological adaptions of virtual weathercasters and digital avatars can supply the twenty-four hour on demand online and mobile audience needing information but does it enhance trust and credibility? Can a completely digital, virtual weathercaster be attractive and appealing? This dissertation research examines weathercasters' thoughts and insights on these questions and the future of virtual weathercasters.

Culture of Weathercasters

A foundation for the study and interpretation of culture is set by social anthropologists (Geertz, 1979; Kluckhohn, 1949). Their view of culture is a semiotic one

and it builds off the work of German sociologist Max Weber. Weber and Geertz see humans as "suspended in webs of significance" that humans have created by way of actions, symbols, and rituals and those webs (meanings of significance) are what constitute culture. While the interpretation of culture has been studied in the television newsroom (Bantz et al., 1980; Gans, 1980; Silcock, 2002) there are no qualitative or quantitative studies that directly address weathercaster culture.

A study about the culture of the meteorologist (Fine, 2007) utilized an ethnographic approach to better understand meteorologists who work for the National Weather Service (NWS). The research focused on six specific objectives:

> (1) how weather forecasting gets done given the bureaucratic obstacles and temporal pressures under which meteorologists operate, (2) how science is defined by these workers and how they situate themselves in relationship to this honorific category, (3) how meteorologists and others depict future events and then justify that depiction, colonizing the future by building on a present and past that they have constructed by means of the machines that they employ, (4) how occupational autonomy maintains itself— in this case embedded in control of language and images— in the face of organizational and technological control, (5) how scientific, predictive accuracy is created through the organizational demands by which forecasts are verified, and (6) how the relationships between these workers and others who stand outside of the boundary of their workplace, including mass media, private companies, and government agents, shape meteorological practice (Fine, 2007, p.3).

The qualitative work done by Fine, a sociologist, is exemplary and the fourth objective noted, concerning the concepts of autonomy and control and the organizational dynamic, is of relevance to this dissertation research. Fine does an excellent job of examining the routines, emotions, and time pressures that compose the working world of the government employed, professional meteorologist. There are other articles that get at the edges of what constitutes some of the characteristics of weathercaster culture and this research is based on previous newsroom culture studies which will now be discussed.

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Newsroom culture studies. The culture of weathercasters can be seen as a subsystem of a larger culture - newsroom culture. Using the term subsystem implies that a hierarchy exists and exploration into the structural relationship between newsroom personnel and the weathercaster is part of this dissertation research. While the term subsystem is used loosely here, further refinement of the relationship between the weathercaster and the newsroom is anticipated. The initial perception is that the weathercaster is embedded in the larger working group of the newsroom or news team as it is sometimes referred to by television station promotions. Given this relationship, it is important to establish the long tradition and historical background of previously conducted newsroom culture studies.

Early studies on newsroom culture done by Breed (1955), Bantz et al. (1980), and Gans (1980) exposed the routines that newsrooms experience. Bantz et al. studied TV newsrooms and found that the production of television news in the 1970s followed a mechanistic type of output. Bantz et al. spent 14 weeks doing participant observation in newsrooms and noticed five steps to developing the product: story ideation, task assignment, gathering and structuring the materials, assembly, and finally newscast production. The study noted that the process created by the nature of news, consultants, technology, and organizational pressures was developing a newsroom culture that had more divisiveness and conflict between management and labor.

Gans studied newsrooms at both the CBS Evening News and the NBC Nightly News in the 1970s and found differences in the way stories were selected. Interviews with producers, editors, and reporters revealed predominant factors applied to the selection of sources such as:

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- Past suitability – Did they use this source before and did they do a good job?

- Productivity – Did the source give enough useful information and was it helpful?

- Reliability – Was it from a credible source?

- Authoritativeness – Did it have importance as a citation or reference?

- Trustworthiness – Could the source be trusted?

Gans also disclosed the factors for story suitability, which were:

- Novelty – How new was the story or how innovative was the reporter in presenting the news story?

- Peg – Did it have a story tie into a peg or main idea that could be applied to the story?

- Redundancy – How often has the same story been told or was the story recently done in a different way?

- Freshness – While this can relate to novelty and redundancy it aligns more with finding a new angle and perspective on the story

- Excessive freshness – this relates to the fad or trendy story. Essentially, it is best to have the latest trend in the newscast but if it is a fad that is on the way out then it may not be as relevant.

Story selection and producer interaction with the weathercaster relates to the Gans study and are connected to the interview schedule questions used in this dissertation research when discussing the relationship of the weathercaster and the producer. The Bantz et al. and Gans studies show the application of qualitative methods in the study of television news and reflect the kind of pragmatic findings available from this type of research, especially when examining cultural factors such as rituals. In review, studies of

routines in television newsrooms have been done for decades (e.g., Bantz et al., 1980; Eliasoph, 1988; Gans, 1980; Silcock, 2002) but the specific routines and rituals of television weathercasters have not been studied.

Rituals. Rituals are a significant part of culture (Geertz, 1979) and no scholarly journal articles have been found that examine the rituals of weathercasters. What rituals have scholars found in newsrooms or news production that could explain the particular culture of weathercasters? Of importance here is the work of Ehrlich (1996) who examined what it means to study rituals in journalism. "Monitoring the opposition" is a key ritual noted by Ehrlich that takes place in TV newsrooms. Knowing what other stations are doing and when they are doing it is important from a competition point of view but it also allows a deeper way of understanding the culture of journalism and weathercasters. Application of Ehrlich and the study of ritual in weathercasting will be done in this dissertation research.

Ritual is defined by Geertz (1973) in the religious context as being a form of "consecrated behavior" (p.112). "In a ritual world, the world as lived and the world as imagined, fused under the agency of a single set of symbolic forms, turns out to be the same world" (Geertz, p. 112). According to Geertz, ritual involves a symbolic fusion of ethos and worldview. More specifically, Ehrlich sees rituals as a "heuristic device" in that it is a category that helps locate a particular resource or practice. So a ritual is "not a what, not a thing, rather it is a how, a quality, and there are degrees of it" according to Grimes (1990, p.14).

Tuchman (1972) points out the similarities and differences between rituals and routines. A ritual differs from a routine in that a routine operates on the organizational

level of analysis whereas a ritual works on the individual level. Rituals can also be broken down into various levels of analysis such as pointed out by Hirsch (1977) and the occupational, institutional, and organizational model. Further refinement of the term adds the idea of strategy for Tuchman sees a strategic ritual as a "routine procedure which has relatively little or only tangential relevance to the end sought" (Tuchman, 1972, p.661). Given these perspectives, the routines and rituals that individual weathercasters use to function within their organizational structures may be seen has having strategically operative applications. The rituals and routines found in this dissertation project are not completely broken down into the various levels of analysis noted above by Hirsch and Tuchman (i.e., organizational models and strategies) but the aforementioned definitions and explanations help establish some understanding of the general terms despite their somewhat ambiguous and abstract nature. Given these various definitional issues, a more concrete and specific definition is now set forth.

Specific definition of routines and rituals. For this dissertation research project, the primary definition of a routine is a pattern of behavior or action done by a weathercaster to function or act within the organization. Following Tuchman (1972), the routine may be attributed to the organizational needs and the ritual may be seen to be in association with the individual needs. Additionally, further definition of the two terms (routine and ritual) is constructed around the idea that a ritual is primarily perceived as a symbolic sacred act whereas a routine may involve a habitual or consistent act that is not necessarily symbolic or sacred in nature. It should be noted that these definitions are not conditionally absolute - meaning that there may be a routine that appears to be a ritual or vice a versa depending on the situation. These definitions are used for application

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purposes in this dissertation and are not meant to be fully encompassing of every attribute applied to the concepts of routine and ritual. Nevertheless, they do allow a general organizing structure to be implemented in the findings area.

Research Purpose

This dissertation research seeks to examine the routines and rituals - culture of weathercasters - by way of thoughts and perceptions given from professional television weathercasters who are embedded in an environment of rapid technological change. The purpose of this research is to study the main concepts (i.e., technology and culture) in relation to the operations of contemporary broadcast television weathercasters working in a severe weather season.

Specific Research Questions

1. What are the thoughts and perceptions of weathercasters concerning technological advances encountered in their working environment in the past and the present?

2. Given the changes from the past to the present, what are the thoughts and perceptions that weathercasters have toward future technologies?

3. What are the routines and rituals practiced by weathercasters?

4. What are the perceived differences found in weathercaster culture in relation to newsroom culture?

CHAPTER 3

METHODOLOGY

Denzin and Lincoln (2000) in their seminal and voluminous 1,065 page *Handbook of Qualitative Research* note the term *bricoleur* (Weinstein & Weinstein, 1991) in relation to the methodologies used by a qualitative researcher. "The interpretive *bricoleur* produces a bricolage – that is, a pieced-together set of representations that are fitted to the specifics of a complex situation" (p.4). The *bricoleur* is compared to a quilt maker or cobbler who pieces together a myriad of small individual parts (patches or cobble stones) in order to get a larger, more elaborate, and even beautiful pattern in the end. Denzin and Lincoln point out that the qualitative researcher needs to not only borrow and adapt from multiple qualitative methodologies but they may also need to invent. "In the interpretive *bricoleur's world, invention is not only the child of necessity, it is the demand of restless art* (p. 1061). In the view of the *bricoleur,* research is not just a perfunctory task involving organization and details to get answers to research questions but it is much deeper; it is an aesthetic form of expression. The methodology in this dissertation seeks to attain a small degree of this unique artistic form, in its own individuality and focus, but it also builds on previously published scholarly literature that establishes the paved pathway to follow.

The idea of the *bricoleur* and the use of invention in designing a specific research methodology is not only pointed out by Denzin and Lincoln, but scholars using historical methodology such as Asa Briggs (1961) note the importance of developing methodological "scaffolding," allowing for new concepts to explain historical

experiences. Godfrey (2006) in the first chapter of his text concerning the *Methods of*

Historical Analysis in Electronic Media notes that "the cookie cutter approach where one

method is dictated to fit all questions" (p.19) is problematic as it lacks flexibility. In

relation to analysis Godfrey states:

> The challenge in borrowing or adapting a new methodology is to avoid forcing
> the subject to fit the pattern - rather the pattern of analysis must be appropriate for
> the object under study (p.19).

Godfrey's statement gives direction for the methodological focus of this chapter: the

"object under study" being weathercasters. While the thought of being "under study"

may be perceived from the positivist paradigm as the scientist controlling the individuals

under his or her direction, the actuality is that this dissertation research follows the

interpretivist paradigm where the participants are able to co-construct the research;

knowledge is discoverable through emergence. Consequently, this chapter is organized

around a methodological structure focused on the primary object -weathercasters'

perspectives of technology and culture- and will first follow some of the exemplary

qualitative research studies done in the past that examined culture in the newsroom since

there are no previous studies on weathercaster culture. Next, a framework for the case

study approach utilized in this dissertation will be set forth following Yin (2003). Third,

a description of the interview schedule and its design will be done. Finally, this chapter

will conclude with an extensive overview of the field, setting, scene, and the participants.

Qualitative Research Method

Qualitative research methods used in newsroom culture studies, previously noted

in the literature review (Bantz et al., 1980; Breed, 1955; Erhlrich,1996; Gans, 1980;

Silcock, 2002; Silcock & Kieth, 2006), have used case study designs and various forms

of ethnography. The depth and rigor of the ethnographic method varies depending on the

situation including the amount of time, the area of study, and the individuals or

organization being studied (Schwartzman, 1993). The ethnographic method has different

adaptations depending on the culture being studied. For example, a cultural

anthropologist (i.e., Geertz) may spend years living in the field studying indigenous

people in an effort to understand culture. Communication researchers (i.e., Scott &

Myers, 2005; Tracy, 2000) and journalism scholars (Silcock, 2002; Silcock & Keith,

2006) can spend considerably less time than the cultural anthropologist (e.g., months and

even weeks) studying a specific group or population and utilize similar methods of

ethnography. Yet these ways of performing ethnography in different manners and

disciplines do not detract from the overall objective or definition of ethnography as noted

by Singer (2009) who states,

> …different researchers suggest different definitions of ethnography, and new
> disciplines have added new twists. But everyone agrees that it involves what
> Lindlof and Taylor call a holistic description of cultural membership (p. 191).

Lindlof and Taylor (2011) reference others to further clarify the distinctive goal of

ethnographers.

> Describing and interpreting the observable relationships between social practices
> and systems of meaning, based upon "firsthand experience and exploration" of a
> particular cultural setting (Atkinson, Coffey, Delamont, Lofland, & Lofland,
> 2001, p.4)

The methods used in this dissertation study employ a form of ethnography -

extensive interviews and participant/non-participant observations to gather research data.

The case study in this project is designed around the format noted by Yin (2003) and

follows the interviewing techniques outlined by Siedman (2013). The study specifically builds off of the qualitative principles noted by Christians and Carey (1989) and the research and analysis also follows guidelines noted by Lindlof and Taylor (2011). Information about these foundational qualitative principles and techniques, which compose the methodological bricolage utilized for this dissertation, will now be given.

Yin's (2003) work on case study design calls for three specific stages (stage one - interview process, stage two - data gathering, and stage three - analysis). These stages compose and organize the dominant structure of this methodology section. Siedman (2013) was utilized as a guide for the interviews as he proposes the use of a phenomenological approach to interviewing involving three detailed interviews with each weathercaster, and this method was applied in stage two. An additional construct for the research was derived from Christians and Carey (1989) who focus on four criteria for qualitative research in mass communication (naturalistic observation, contextualization, maximized comparisons, and sensitized concepts). These key components were applied during all three stages and specifically relate to the study sites, participants, findings, and analysis. Finally, Lindlof and Taylor (2011) note the analyzing of the ethnographic data by using the concepts of triangulation, thematic analysis, and constant comparative analysis. These analyses were primarily applied during Yin's third stage. Identifying specific details of Yin's three stages of case study research will now take place along with applications on how this dissertation study was done.

First Stage of the Case Study

The case study approach in this dissertation follows Yin's (2003) first stage - planning and designing. During this stage an overview of the environment and the actors (subjects to be studied, mainly the weathercasters) takes place. As noted by sociologist Peter Berger (1963) the people to be studied should not be treated as "puppets on a string" or as prisoners of research but rather they are to be seen as "actors on a stage" in a drama that they themselves can change. These actors can and do write the script. Given this perspective, the actors are those who comprise the weather teams at television stations. Typically, this involves about three to four individuals at each station who have diverse backgrounds, interests, and experience. Getting interviews and feedback from all weathercasters at each station was a difficult task as they each had different schedules, interests and preconceptions about being questioned at work. Making the process of observation less clinical, protracted, and abstruse for the participants was done by following the guidelines of Christian and Carey (1989).

Naturalistic observation (Christians & Carey, 1989) is essential to generating truly authentic information from the actual situation. Being able to observe and elicit real feelings, emotions, attitudes, and expressions by the weathercasters is crucial. Preliminary face to face discussions, phone conversations, and email correspondence done in this first stage developed rapport and enabled input from the weathercasters before doing the formal interviews. Getting naturalistic observations in the working environments was developed by establishing and maintaining good working relationships with the weathercasters so that they felt comfortable and at ease with the research process. For the weathercasters who did not know me or had never had any interactions

with me it took more time to develop this trust and openness but as the research process progressed, greater depth and insight concerning the answers to the research questions came forth from the weathercasters.

Yin notes that in the first stage an examination of theory should be done as well. This dissertation study is not driven by *a priori* assumptions. Various theories are not predetermined to be of use and application in this study and deductive reasoning is secondary to inductive reasoning. General theoretical connections may be derived from the observations, but it is the primary objective to have the data, mainly the participants, speak to the research questions allowing for authentic, unconstrained discourse to occur. This is not to say that there is no structure being followed, for the discussions with the weathercasters were informed by a general understanding of newsroom culture theories (Breed, 1955; Bantz et al., 1980; Gans, 1980; Silcock, 2002). Silcock, in his study of television news producers working for Deutsche Welle's (DW-TV) satellite-distributed news broadcast, examined a bi-cultural environment demarcated by ethnicity (Germans compared with Anglos) whereas, in this dissertation study of weathercasters in the newsroom there is a different, unique dynamic examined not based on nationality. Newsroom personnel and weathercasters have differences at each station in the overall television news industry, and understanding these unique differences based off ethnicity is not the focus of this dissertation study. Unlike Gans, who studied national network newscasts and newspapers, this particular case study is local. Consequently, developing local models or a theory that inductively applies the findings revealed in the elite

(Hochschild, 2009) interviews[8] and participant observation is a desired outcome. The specific methods used for gathering the data needed to develop these models will now be further examined by describing the interview approach and design.

  Interview approach and design. In this section a general overview of the interview structure and process occurs and specific details on how the interview will be conducted are found in stage two. The interviews are constructed around the approach used by Siedman (2013) which follows four specific themes. First, the transitory and temporal nature of information is crucial. What is said needs to be captured in the actual moment that it is occurring. Each of the formal interviews was digitally recorded and there were participant observation and informal interviews that occurred as well. The next area noted by Siedman is subjective understanding. Putting the subjects' view at the forefront and not the interviewer's needs is highly important. Going into the questioning phase the interviewer maintained a constant focus on the subjects' understanding. Siedman's third theme revolves around the "lived experience" of the subject. This was accomplished while doing the participant and non-participant observation and getting information from deeper level formal and informal questioning. Finally, the fourth theme is to understand the meaning in context. This means that the interviewer needed to ask questions and find out more by looking at the context. The interview process can be compared to the layers of an onion in that there are many layers that can be peeled back to reveal the subtle or true meanings of an event, story, or explanation. What follows is

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[8] Elite as defined by Hochschild is not necessarily meant to be someone of high social or economic status, but is a term used to describe a person who is chosen by name or position for a particular reason, rather than randomly or anonymously.

an application of the items to be covered in these interviews based on earlier established research and the second stage noted by Yin (2003).

Second Stage of the Case Study

During this stage the collection of data occurs and because the case study process is an iterative one, according to Yin (2003), additional feedback may occur in relation to how to better gather and prepare the data. Gathering the data occurred primarily from interviews but observations were also done with field notes taken. Siedman (2013) recommends a series of three elite interviews with each of the participants. These were mainly conducted in a private area that allowed for digital recording to occur unhampered by excessive ambient noise or interruptions. The first interview with each participant contains a "focused life history" to help understand the person and place the individual into context. The second interview looks at the "details of experience" which includes a careful description of each day of work or activities along with explanations regarding relations to others. It was pointed out by Siedman that each day, during an eight hour working shift, there are approximately 30,000 events that happen. It is the reconstruction of these details. This gives a "thick description" as Geertz (1979) put it and allows the researcher an opportunity to open up explications and inscriptions about the situation. The final interview, as prescribed by Siedman, is a reflection on meaning interview. Consequently, the participant reflects upon the events and the actions discussed along with new thoughts that are occurring. The weathercasters are able to think and re-think about the meanings of what has happened at work and what does happen at work. Specific details on the elite interview guide will now be given.

Elite interview guide structure. Following Yin (2003) and the constructivist nature of the project, a formal elite interview guide was established at the end of stage two. The interview guide was broad and fairly comprehensive, including areas of research relevant to future studies (see Appendix A for a copy of the interview guide). The interview guide was semi-structured and therefore not meant to be an exhaustive list of areas or questions as additional questions were anticipated during the interviews and in the pre-interview preparation process. Some systematic questioning did occur as similar types of questions were asked of all of the participants, but by nature of the constructivist paradigm there were individual adaptations as the interviews also followed the guidelines of Linlof and Taylor (2011) who note that the interview needs to be "suited to understanding the social actor's experience, knowledge, and worldviews" (p. 173). Based on the ideas presented in the primary research questions and research found in the literature review, the following areas were covered in three separate interviews personally conducted by me with each individual weathercaster.

The first interview not only developed a life history as Siedman (2013) recommended, but it also examined how one becomes a weathercaster and the processes of understanding how to operate weather presentation technology. The specific objective was to build rapport with the participant and to gather background information. Additional information on learning how to be a weathercaster and their views on technology was also included. Essentially, the details of how they became involved in weathercasting and what they did to get to the present employment position (i.e., chief meteorologist, morning weathercaster, weekend weather presenter, and reporter) were obtained. Information was also gathered on the weathercasters' current training in terms

of seals or certifications. Advanced seal (AMS or CBM) status was discussed and additional questions were asked about their views of participation in organizational training from the television station, the NWS, or NOAA, and the weather computer vendor (WSI or WCI).

The second in the series of three interviews followed Siedman's (2013) methodology by focusing in on the details of experience.   Specifically, the interview questions probed the weathercasters about their activities at work, their routines, schedules, and actions.   It also moved into a discussion about newsroom culture and the relationships that the weathercaster has with newsroom personnel. Questions about divisiveness and cohesion were asked along with what the weathercasters think about time in the weathercast and some of the constraints that come with time. Specific stories and examples were elicited by asking the weathercasters to explore the interactions with others in the newsroom. Discussions about the weathercasters' roles in story selection, especially going into the start of the newscast (e.g., when there is breaking weather) and the types of lead in stories - those done before the weathercast - were conducted.

Details were gathered from questions on cultural rituals and examples such as personal stories were obtained. An increase in trust between the participants and me, the interviewer, was developed and allowed for additional personal insights from the weathercasters to be recorded. Specific examples were obtained on how the weathercasters are monitoring the opposition and the physical surroundings of their work area were noted concerning televisions and technology in their work area and how they utilize them.

Using information from consultants such as Magid,[9] who see weather as "King," discussions were engaged that talked about power in the newsroom and the role of the weathercaster. Warnings issued by the NWS and how they are perceived in terms of importance along with the functional ways that warnings are transmitted by technology were discussed next. What weathercasters thought about saying and using the brands issued by management and consultants was discussed as well as what the weathercaster thought about their own identity or brand. Attribution and the verbal representation of national organizations as the NWS, such as when a severe thunderstorm warning is issued were examined. Thoughts concerning personal attributions that occur when the weathercasters give his or her personal name on the forecast were explored with each weathercaster. Finally, the weathercasters thoughts on the issues of authority, dominance, attraction and appeal based on stereotypes were discussed in the second interview.

The third interview in the series moved into the area noted by Siedman (2013) as a reflection on meaning interview as the weathercasters were asked to define and further refine the cultural characteristics of weathercasters. Follow up was done on the items discussed when exploring the culture of weathercasters in relation to newsroom culture. Some of the cultural components, routines and rituals, of weathercasters were further explored and discussions about the way weathercasters get ready, dress, do make up (the

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[9] Frank N. Magid Associates was started in 1957 and according to its website, "Frank Magid is perhaps best known for developing the company's work in the media industry, particularly in television. It was Magid who, based on the research his company had conducted, recommended that CBS feature Walter Cronkite as a solo anchorman on the CBS Evening News, catapulting Cronkite to a highly visible and successful career" (See http://www.magid.com/our-founder).

mirror area) voice exercises, stretching, say things to others, do not say things to others were discussed. Examples of humorous stories that tell of the funniest or most bizarre thing to happen to a weathercaster while doing the weather or news were gathered. Questions were about the use of humor (in the newsroom/weathercaster environment) and how to relieve tension or stresses were done.

Additional information was obtained on who the weathercasters think is the best and who do they admire (nationally, locally) and why. Many television programs have Emmys as do the local newscasters and weathercasters so discussion was engaged about this process concerning their thoughts about Emmys: have they ever received one? What is their participation? Do they go to the award events and have they served on a judging panel?

The ideological difference between being a meteorologist versus being a personality when presenting the weather was discussed. The dual role of a weathercaster as a person of "credibility" (i.e., the serious scientist) but also a "personality" (i.e., the funny clown) is an issue that other weathercasters in the past have noted.

> Being clear and concise is important, but having zero personality is boring, and could also result in a lack of attention being paid. Who knows if I ever got it right, but I do know that I and the majority of people in the industry do our very best to get the message across in an engaging but not distracting manner (Roberts, 2012, p.137).

What role should the weathercaster play and when should they play this role was debated as well as what it means to have character and be a character.

Finally, questions about what is at the heart of being a successful weathercaster and a list of at least five characteristics from each weathercaster were obtained. Also, specific comments from the weathercasters concerning what they want to be remembered

for after their career has ended were gathered at the end of interview three. More specific examples of the interview content utilized for the interviews are now discussed in relation to the central ideas concerning the concept of culture.

Additional interview details for newsroom culture questions. In review, the structure of the interviews follows Siedman (2013) and a specific list of interview questions was developed after preliminary phone and email correspondence with the participants and after reviewing the previous literature on newsroom culture studies. The constructivist approach allowed the participants to help shape some of the questions that were presented in the formal interviews following a semi-structured interview protocol. The interviews obtained data and help understand the weathercasters' experience and perspective through accounts, explanations and stories. Questions elicited stories derived from newsroom interactions and focused on extant differences as found in previous newsroom studies. For example, Bantz et al. (1980), Breed (1955), and Gans (1980) conducted newsroom studies and found a culture of divisiveness. Questions were asked of weathercasters concerning divisiveness present in news/weather producing. Follow-up discussions occurred and examples were requested. One example concerning divisiveness came in the form of time constraints which are highly relevant to the weather time allotted in a broadcast. When breaking news happens weather time can be cut and if something technical goes wrong (a live report does not come in) then weather tends to be the filling agent. Stretching and contracting time before and during a newscast can create a sense of tension and conflict that reflects in the on-air product. Questioning and interviewing weathercasters about the time allotted for a weathercast and the types of interactions between producers and weathercasters along with the priority of weather in a

newscast brought forth interesting observations and stories to help explore and explain the manifestation of culture in the newsroom.

Another example of interview content that applied previous research methodology involves the factors noted by Gans (1980), both for source selection and story suitability, as it relates to weathercasters. When selecting content for a weathercast, the weather person needs to gather information from various sources and determine how to produce the weathercast. This involves decision making that may be studied the same way Gans noted in his study. An example of an application of this happened when examining the decision making process that occurs in deciding what news goes on before the weather. Understanding this process helps explain the interplay between weather and news. Story selection that follows some of the criteria noted by Gans can help to increase the synergy and better reflect a smoother, more polished news product. These types of subtle functions in the news rundown and the specific stories that occur before weather reflect culture both in the newsroom and in the weather department. Asking participants to talk about lead in stories going into the weathercast were part of the interview interactions.

Additional interview details for cultural ritual questions. Based off Ehrlich's (1996) work on culture rituals, pre-identified areas of study in relation to the weathercasters were applied to the interview questions. Five pre-identified areas (monitoring the opposition, weather crawls, branding, attribution, and weather cut-ins) relating to possible weathercaster ritual questions will now be discussed.

As Ehrlich (1996) noted, monitoring the opposition takes place in the newsroom and this takes place in the weather center as well. Most television stations have an area where the weather computers and production of the weather product takes place. This

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area can have its own monitoring of the opposition typically by having monitors turned on to the national and local weather broadcasts such as The Weather Channel and local 24 hour digital weather channels. This affords the meteorologist an opportunity to study what others are forecasting and presenting as well as to critically evaluate and reflect the culture of weathercasters both nationally and locally. Discussion of this with the weathercaster happened in the second round of interviews.

Next the weather center and television stations run crawls (on screen text alerts with beeping alarms) during severe weather modes. This reinforces the concept of immediacy and the important role that the weather plays in life and death. Even when the warnings pertain to areas many miles away, the community is informed about the event. The warning crawls establish the preeminent value of weather as the "king" of programming as it literally takes over the screen or the on-air product until the threat has passed. Interviewing weathercasters about this happening during severe weather is especially important as it relates to the power structure of news and weather and its ability to save lives or at a minimum help viewers avoid weather related storm problems.

A third area of relevance to questions about rituals comes from the concept of "branding."   Television stations and many weather driven television markets "brand" the technology using names such as "Live Doppler 7000 Weather Forecast" or "First Alert Forecast" to give more credibility and focused attention to themselves over other stations. This branding procedure can be driven by outside influences such as consultants and corporate management structures that push a product over a person and ironically reflect "what is valued" (technology) when the goal of broadcast meteorology is the preservation

of life. Discussion with weathercasters and their feelings about branding happened in interview two.

Attribution is the next significant area of interest employed by weathercasters. This occurs when the on-air person notes a higher authority or source of information such as, "according to the National Hurricane Center" or "the National Weather Service has issued a tornado warning." When these verbal and graphic representations are made it reflects the hierarchy and flow of information presented in a manner that gives preference to governmental agencies. Examination of verbal content used by weathercasters, especially during severe weather, and discussion and questions with them will also help elucidate more on this topic.

Some weather people are their own source of attribution, for example, "time now to look at my hurricane forecast" or "here is John's 7-Day outlook." Some news directors and management ask weather people not to refer to governmental agencies in their local weathercasts. These weather people and television stations are practicing the process of self-recognition and image recreation. This may allow the weathercaster to take on the individual view of "grand authority" and attempt to enforce an ideology of superiority and exclusiveness. Questions and discussion about this with the weathercasters also occurred in interview two.

Finally, a possible ritual that connects back to placing crawls on screen during severe weather modes occurs when the weather anchor actually breaks in to programing with live severe weather coverage. These "cut-ins" are the ultimate action of power dominance, when no matter what is being broadcast is superseded by weather. This action occurs in weather driven markets with severe weather such as in the mid-west

during tornado outbreaks, during the hurricane season in the Southeast, and in Phoenix during the Monsoon.

Ehrlich (1996) points out that ritual can occur at different levels (e.g., individual, occupational, institutional) and relate to different aspects of society. The pre-identified area mentioned above concerning attribution relates most to the individual level as it is perceived to be a ritual involving self-recognition. The other areas have connection to the occupational and institutional levels. Looking for weathercaster comments and content that relates to these aspects of ritual was done in observations and interviews.

Third Stage of the Case Study

Next is the stage of analyzing and concluding according to Yin (2003). This stage is reached by transcribing, coding, and making sense of the data obtained. According to Lindloff and Taylor (2011) "sensemaking" involves "two processes: data analysis and interpretation" (p.242) and there are three specific areas to focus on during qualitative data analysis: "data management, data reduction, and conceptual development" (p.243). This section will follow these three areas in the order noted.

The first step for data management was transcribing the interviews and placing them into analysis areas with relation to the weathercasters and the main research questions of the study. The transcription of the 48 elite interviews brought forth 783 single spaced pages of text. Due to the large size of the text data, a CAQDAS (computer assisted qualitative data analysis software) program was implemented. Discussions with colleagues (PhD students and research professors) at the Cronkite School, along with reading extensive reviews and examining research on different software programs led to

the selection and implementation of the Dedoose CAQDAS program. Dedoose allows data to be stored online and was helpful for managing, coding, organizing, and analyzing the text data. Additional files containing notes of observations and the digital recordings of the interviews are able to be stored online in Dedoose as well. Lindloff & Taylor (2011) point out that a CAQDAS such as Dedoose is a text code-and-retrieve tool that is "often modeled after the grounded theory approach" (p. 263).

Grounded theory (Glaser & Strauss, 1967) uses inductive logic and employs the constant comparative analysis method (Strauss & Corbin, 1990) where "categories develop through an ongoing process of comparing units of data with each other" (Linloff & Taylor, 2011, p. 250). The inductive nature of the constant comparative analysis process allows a researcher to examine his or her data and find emergent categories to organize the data. Hence, grounded theory is derived from the data and as it is re-reviewed more codes are developed and grouped into concepts and then into categories. These categories may become the basis for new theory or an emergent theory "grounded in" the data especially when compared with observations or direct contact with the social phenomenon being studied.

> Emergent theory (ET) is an outcome of organization research in which theory is allowed to come to light through a systematic data collection and analysis process called grounded theory, a research approach committed to discovery, direct contact with the social phenomenon of interest, and a rejection of explicit a priori theorizing. ET is a product of grounded theory (Human, 2008).

Emergent theory in this dissertation research will be addressed in chapter five by way of the models and discussion. For now it is important to note that the Dedoose program was used to implement the constant comparative analysis approach as codes were formed,

refined, compared, and analyzed throughout the prescribed qualitative communication

research methods process noted by Lindlof and Taylor (2011).

The process of coding is not done automatically through Dedoose. I read and re-read each transcript and specific excerpts from each comment were then given codes. In the end, the analysis process involved the human researcher (me) manually scouring over 700 pages of transcripts and personally identifying 1,590 coded applications obtained from 953 transcript excerpts. Each one of these excerpts are kept in separate areas in Dedoose and can be seen in the bottom center box found in Figure 3.1.

Data reduction occurred throughout the constant comparative analysis process and eventually 91 codes emerged with 12 coded categories having multiple sub-categories. The two largest categories were technology (103 coded excerpts) and culture (98 coded excerpts). A screen shot of the home page of Dedoose with the coded weathercaster data and transcripts for this research loaded into the program are shown below. Note the codes and code applications in the upper left hand corner of the screen shot in Figure 3.1.

Figure 3.1.

Coded Weathercaster Data on Dedoose
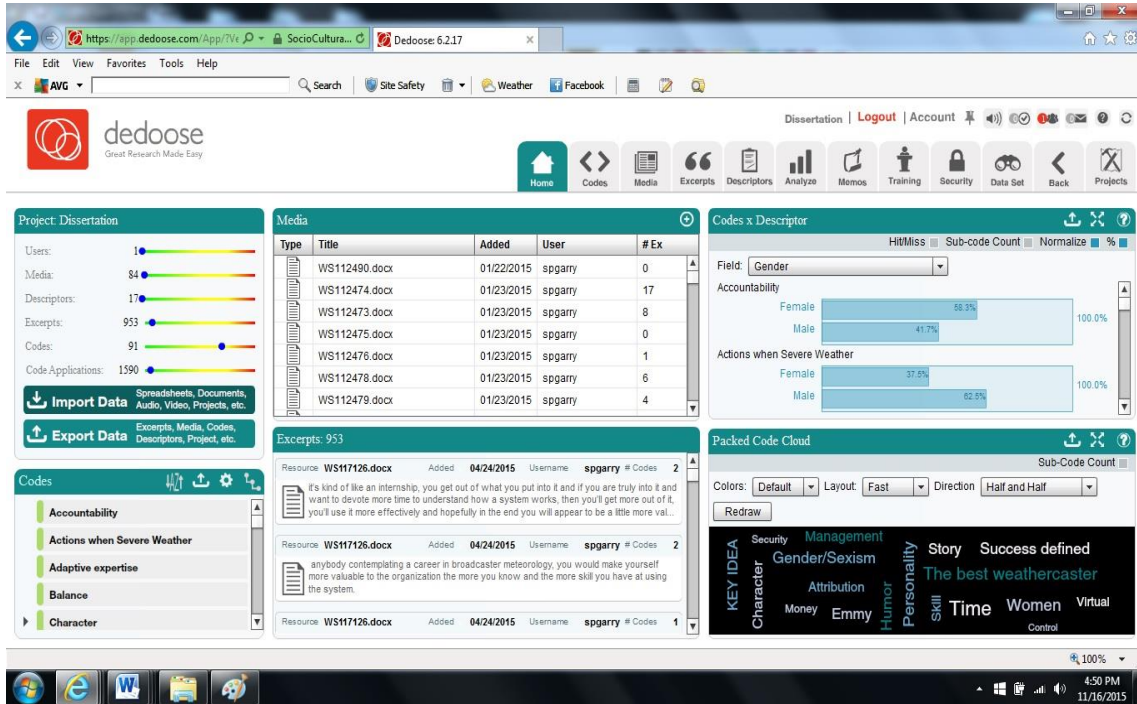
The screenshot also indicates multiple tools available in Dedoose such as visually

representing the data in packed code clouds as seen in the bottom right corner of Figure

3.1 and the ability to quantitatively and qualitatively represent the data by correlating

codes and descriptors (the participants or weathercasters). Also, the upper left hand box

shows the number of users. In this case it shows that as the researcher I was the only user.

The number in the upper left box for media is 84 indicating the number of transcription

documents (not pages) uploaded to the program. There are 17 descriptors

(weathercasters) shown on the screenshot in the Dedoose program upper left hand corner

box and details on the participants will be presented later in this chapter in the participants' information section.

Next, following Lindlof and Taylor (2011), conceptual devices of interpretation took place. This happened while coding the data and examining the findings. The process was done individually by me as I conducted all of the interviews and was very familiar with all of the data. Emergent themes were defined and developed in an effort to find patterns and concepts to examine. Each interview was re-examined and then evaluated by way of triangulation and crystallization as noted by Lindloff and Taylor. This means there was correlation not only with the data between the interviews but also with other data gathered by field notes and observations. Emergent patterns, symbols, and meanings came to light in the analysis process and became evident in the findings and discussion area. After expected and unexpected research findings became available and the initial analysis was compiled and written, reflective feedback on the findings occurred. This iterative process was used to get additional insights and information shedding greater light on the findings. The iterative process is part of Yin's (2003) case study approach and this dissertation research went through several partial adjustments as the iterative process occurred. For example, after the design and planning stage and during the collection stage, there was feedback from the weathercasters allowing the interview process to improve and helping me become better at attaining data to help answer the research questions. Also, during the analysis phase feedback found in the interview transcripts brought me back to the collection and design phase giving me insights relevant to additional case studies to be done at other television stations in the future.

Finally, following Yin (2003), the third stage entails concluding and involves the application of theory: especially if using a deductive approach. As mentioned earlier, this dissertation research is focused on an inductive method allowing the data found in the interview responses and observations to shape theory rather than having a priori hypotheses. The final write up of the theoretical considerations derived from this dissertation research is done in the final discussion chapter. Next in this methodology chapter is an explanation of the research schedule utilized for this dissertation followed by a section involving self-disclosure explaining my prior work experience and background. After this, specific details on the setting of where this study was conducted are presented.

The Schedule and Implementation of the Three Stages

The stages described above in this methodology section were in operation while following the research schedule below. It should be noted that the schedule was altered from its original timeline which allocated four months per stage or one full year for the entire dissertation project.

Table 3.1

Original Research Schedule

Stages	Activities	Calendar	Time
Stage 1	Define & Design	January to April 2014	4 months
Stage 2	Prepare, Collect, & Analyze	May to September 2014	5 months
Stage 3	Analyze and Conclude	October 2014 to January 2015	4 months

It was anticipated to take about one year to complete the dissertation research and write up the results but due to the large amount of interview data, and the process of transcribing it, coding it, and implementing a CAQDAS program, the overall schedule was extended an additional year. The actual schedule was as follows.

Table 3.2

Actual Research Schedule

Stages	Activities	Calendar	Time
Stage 1	Define & Design	January to April 2014	4 months
Stage 2	Prepare, Collect, & Analyze	May to November 2014	7 months
Stage 3	Analyze and Conclude	December 2014 to January 2016	13 months

The analysis of the large amount of interview data, the findings, and the concluding and discussion area of the dissertation write up were considerably more time consuming than originally scheduled as noted in the over one year spent on stage three. Given the nature of qualitative research work with the copious amounts of transcript text to review, organize, and make sense of, the overall project took nearly twice as long to complete as originally anticipated.

IRB (Internal Review Board) approval of the project occurred as planned at the end of stage one. The IRB determined that the protocol was considered exempt pursuant to Federal Regulations 45CFR46 (2) tests, surveys, interviews, or observation on 4/22/2014. Documentation was sent from the IRB administration to the dissertation committee chairman Dr. Silcock on that date as well. Copies of the recruitment letter and consent form are in the Appendix B and C.

Delays occurred in stage two primarily due to access and scheduling issues with the professional weathercasters. Getting access to the weathercasters and setting appointments and interviews also involved managerial approval at all television stations. This took added time and a considerable amount of communication by both phone and email to coordinate and situate. Each weathercaster had to be assured that what they were doing was completely acceptable with their station management. Weathercaster vacations, illnesses, and other scheduling problems caused difficulty in all three interview periods (before, during, and after the Monsoon) and extended the post Monsoon interviews into the end of November of 2014 while the original goal was to have the third and final interviews done by the end of September 2014. It was a difficult task to get the initial interview appointments and all of the follow up interviews accomplished even

though I had previous interactions as a professional with seven out of the 17 participants. The following is a detailed disclosure of my role as a professional weathercaster explaining how I situate myself in this dissertation research.

Participant Observer & Researcher Background

My role as a researcher in this dissertation can be better understood by knowing my past. I have worked professionally "on-air" in the television broadcast news business for over 18 years and was employed full-time under contract for various ABC and CBS network affiliates in Arizona, California, Florida, and Nevada as a broadcast meteorologist for over a dozen years. As an undergraduate student I obtained a bachelor's degree with a major in geography and a minor in communication and focused my directed study research in weather and climate. I also continued to study advanced meteorology while working professionally on-air. I hold the most advance certification available from the American Meteorology Society (AMS) known as the Certified Broadcast Meteorologist (CBM) and became an AMS sealed meteorologist over fifteen years ago in 1999. My primary on-air working role in the Phoenix television market at the time of conducting and writing this dissertation is as a fill-in or free-lance meteorologist which usually involves working during vacation periods, holidays, weekends, or times when university teaching or classes are not being conducted. Also, at the time of writing this dissertation I had spent ten years working both full and part-time as an on-air broadcast meteorologist[10] in the local television Phoenix news market.

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[10] Typically, those weathercasters who are sealed or certified are referred to or given the on-air occupational title of meteorologist. This is not a set rule by local news stations.

The severe weather season (the Monsoon) in the Phoenix area has been a large part of my weathercasting career, but I also spent several years in Florida forecasting and chasing severe weather such as severe thunderstorms and hurricanes in the late 1990s. A highlight, perhaps the climax, of my severe weather career was reporting live from the beach in Florida as powerful, category five, hurricane Floyd churned offshore eventually causing flooding and extensive damage to parts of the Southeast. When I watch the severe weather storm chasers out in the midst of the action I think to myself, "I have been there, done that" and although I enjoyed my full-time, on-air career I am moving forward into academic research.

This professional background with severe weather and live local news broadcasting added to my knowledge and experience; it was needed to relate to the weathercasters I studied in this dissertation. My education in the professional broadcasting environment and the work world training received helped me be a better research instrument. As Janesick (2000) points out when summarizing some of the key characteristics of the qualitative design,

> Qualitative design requires the researcher to become the research instrument. This means the researcher must have the ability to observe behavior and must sharpen the skills necessary for observation and face-to-face interview (p. 386).

Conducting face-to-face interviews with weathercasters was not only used as a method for obtaining new insights but it was a venue for me as a weathercaster to do reflexive thinking as well. My role in this dissertation writing is not to perform an autoethnography, but it is to gather information from weathercasters who are employed full-time during the severe weather season of the Monsoon. Examining those who are currently engaged in the process on a full time basis excludes me from including myself

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in the population of weathercasters interviewed as this was one of the qualifying features.

Certainly it would be irrational to interview myself, yet I perceive myself as an active

participant observer and while I am not one of the 17 weathercasters formally

interviewed, I have done and continue to do the job of a weathercaster during this

research. The thoughts of Virginia Olesen found in Denzin and Lincoln's *Handbook of*

Qualitative Research (2000) come to mind when looking at myself as an active

participant observer and researcher. "In a certain sense, participants are always 'doing'

research, for they, along with researchers, construct the meanings that become 'data' for

interpretation" (p. 234).

Applying the typologies of participation roles in field research first proposed by

Adler and Adler in 1987, the third role or category is applicable to my situation as a

researcher.

> A third category that of "complete-member researchers," is composed of those
> who study settings in which they are already members or with which they become
> fully affiliated in the course of research. Even though practitioners in this
> category celebrate the "subjectively lived experience," they still strive to use their
> membership "so as not to alter the flow of interaction unnaturally" (Adler &
> Adler, 1994, p. 380).

This role applies in that I am already a member; I have worked as a nationally certified

broadcast meteorologist for over fifteen years and have interacted with many of the

existing weathercasters that I have known in the local Phoenix television market for ten

years as well. I have subjectively lived the experience of a weathercaster in live local

news in the market and during this dissertation research I strived not to alter the flow of

interaction unnaturally. Having established my background and role as a researcher, I

will now establish the field, the setting and the scene.

The Field, the Setting, and the Scene

Understanding the environment to be studied in qualitative communication research involves knowledge of the important distinctions between three terms – the field, the site or setting, and the scene – according to Lindlof and Taylor (2011). The specific differences and definitions of these terms will now be given and related to this dissertation research. Generally, these three terms are seen as going from larger to smaller in the order presented – field, site, and scene.

"The term field refers to the general intersections of the topic and territory in which research takes place" (Lindlof & Taylor, 2011, p. 88). Basically, it is the broad scope. In this dissertation research it is defined as the climate or overall meteorological dynamic - severe weather during the Monsoon.

A site can also be called the setting and "refers to a specific, local, physical place in which the researcher and the social actor coexist" (Lindlof & Taylor, 2011, p. 88). More specifically, in this dissertation research the focus is on multiple actors (weathercasters) in a defined television market; this second term is therefore defined as the overall television market of Phoenix, Arizona.

The third term, scene, is defined by Lindlof and Taylor (2001) as the "actors' self-defined scope of social action […] a context in which a particular, recurring episode of social action takes place" (p.88). This is the specific television station where the weathercaster works and socially interacts most with others in the newsroom. The scene includes the weather set and the news studio as well. Additional details and information on the field, the site, and the scene will now take place.

Field: Severe Weather in the Southwest - The "Monsoon"

The nature of the North American Monsoon in the U.S. is unique in that it primarily affects the distinct region of the country known as the Desert Southwest. During the summer months this area experiences massive "Haboobs" (the Arabic word for dust storm) along with severe thunderstorms making it an ideal period of the year to conduct case study research involving active and severe weather.

Technically, the Monsoon should not be referred to as a *season* because the name itself indicates it is a season. Translated literally "Monsoon season" would be season season.

> The word monsoon originates from Arabic *mauzim*, meaning season. It was first used to depict the winds in the Arabian Sea, but later it was extended for seasonally changing wind systems all over the world (Galambosi, 2015).

Consequently, this report will not use the terms Monsoon and season together as is done with "tornado season" or "hurricane season" in order to show deference to the true meaning of the word and meteorologists who research this unique and multifaceted weather event. Whether it is called the Monsoon or the "Monsoon season" is not nearly as important as the fact that the seasonal shift in wind can cause great destruction, problems, and disruption to everyday life in the Phoenix area.

The dramatic weather and the hazardous conditions which occur during the few months of the Monsoon bring weather related news stories and meteorological forecasting to the top of the newscast in Phoenix. The variety of active weather situations including flooding, high winds, lightning, hail, blowing dust, and debris during this time of year push technology toward the forefront as the Doppler radar and storm tracking activities increase considerably. The sunny and dry desert, typically seen as a relatively

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inert weather region, can change rapidly and dramatically depending on the amount of Monsoon storm activity. The Monsoon has a direct effect on Arizona Sonora Desert rainfall amounts as noted by the Western Regional Climate Center. Rainfall during the Monsoon can exceed nine and a half inches (9.56 inches in 1984 in Phoenix) which normally averages an annual rainfall of 8.04 inches.

The high amounts of rapid rainfall, especially in August, can place stress on water flows (dams and rivers) traffic, roadways and even air travel. This transforms the fairly benign weather of Arizona into weather that is deemed worthy of coverage by both local stations and national news networks. Furthermore, the flow of moisture or pattern of movement shifts during the Monsoon and places Arizona at the focal point of this steering current or flow, typically occurring around the 18,000 ft. level (Douglas, 1993) in the U.S. making Arizona an excellent location for a case study of weathercasters in a unique meteorological environment.

Review of Monsoon 2014

This section provides details about the severity of the weather that occurred during the Monsoon of 2014. Like "tornado season" in the mid-plains or "hurricane season" in the South, the Monsoon can vary considerably each year in terms of severity and rainfall. The interesting and unique aspects of the Monsoon in 2014 are now examined by looking at the main impacts felt in the Phoenix area as reported by local news.

Monsoon 2014 was the seventh wettest on record with a total of 6.34 inches of rain according the National Weather Service in Phoenix. The average amount of rain is

2.71 inches and areas of Phoenix received more than three months' worth of rain in just seven hours on September 8, 2014, with the record-breaking 3.30 inches of rain from the remnants of Hurricane Norbert. It was the most rainfall ever recorded in the Phoenix area in one day, adding to the uniqueness of this study at this time.

Associated with the record setting rainfall was the amount of damage caused by Monsoon related thunderstorms. Examples of this occurred where major interstates on the west side of Phoenix such as I-10 were literally turned into temporary lakes leaving cars either underwater or flooded and floating with drivers stranded in them. The major east/west interstate was shut down for 12 hours. The same type of freeway flooding occurred in the eastern sections of the Phoenix area as well where the U.S. 60 was shut down and under water. Mesa Mayor, Alex Finter, was quoted on the news saying, "This looks like a mini Katrina out in the West" ("Monsoon Special," 2015). Additionally, there were reports of over 125 homes with flood damage and the governor of the state of Arizona declared a state of emergency in the two large counties of Maricopa and La Paz.

Wind and dust are other major problems. In fact on July 3, 2014, a dust storm cancelled the "Red, White and Boom" Fourth of July event south of Phoenix in the Awatukee area. Even though the rain that followed the dust storm was minimal, the wind and dust knocked out power and toppled trees. Tree damage is common during the Monsoon and multiple reports of storm damage get into the news.

> On July 14... trees toppled under high winds near 44th Street and Indian School...
> in a Walgreens parking lot. That same evening... near 12th Street and Hatcher in
> Phoenix... a woman had to be rescued from her car ("Monsoon Special," 2015).

On July 26, 2014, a macroburst hit the area of 40th Street and Greenway in Phoenix. A macroburst is different from a microburst in that it impacts a larger area. Note the differences in the following table comparing a microburst and a macroburst.

Table 3.3

Severe Monsoon Weather: Microburst and Macroburst

Microburst	Macroburst
Damaging winds extending 2 1/2 miles or less	Damaging winds extending more than 2 1/2 miles
Lasts 5 to 15 minutes	Lasting 5 to 30 minutes
Can cause damaging winds as high as 168 MPH	Damaging winds, causing widespread, tornado-like damage, could be as high as 134 MPH

Note. Data retrieved from NOAA.

Damage in the area of the macroburst was about 12 square miles with winds measuring between 50 and 70 mph. Damaged roofs, trailers, homes and businesses were reported and the macroburst was confirmed by the National Weather Service. The practice of confirming the type of damage and the cause of the damage is a common post-storm activity done by the meteorologists at the local National Weather Service office.

August 19, 2014, brought more flooding with the worst happening in the New River area just north of Phoenix. Along the New River there were seven water rescues reported by the Phoenix Fire Department. Reporters noted there was a wall of water so powerful that it hit a home and took it off its foundation "destroying everything inside" ("Monsoon Special," 2015).

The end of the Monsoon brought widespread damage on September 27, 2014. Again powerful thunderstorms and downdrafts caused power outages leaving over 70,000

people in the dark after 27 power poles were toppled by extremely high winds. The storm also caused a partial evacuation of the Phoenix Sky Harbor international airport, tearing off part of the roof of a terminal, and grounding all flights for over an hour causing rippling air traffic delays.

Monsoon Specials

The above mentioned storm reports highlight the impact of Monsoon related events, and demonstrate the reason weather is a top priority during the Monsoon. In response to these weather related threats to life and property television news stations in Phoenix have dedicated time, money, and other resources to producing special programs about the Monsoon. These severe weather preparedness television specials are produced and aired at the start of the Monsoon in June and attempt to accentuate the need to follow the weather and pay attention to the weather forecast during this time of year in Arizona. While self-promoting and self-serving in many respects the overall objective is to inform viewers of the dangers and potential problems with the Monsoon.

Finally, in a television market that continues to grow larger and larger there is a consistent influx of new audience members who come from all parts of the world and have little understanding, knowledge, or information about the storms that happen during the Monsoon. This new audience is served by the added programing and news/weather coverage given before, during, and after severe weather events especially in a large television market. A description of the site selection for the study will now be discussed as it was determined that a large television market would work best.

Site Selection – Phoenix

The site or setting of relevance to this study includes large market broadcast

facilities in Arizona due to the abundant resources such as weather technology,

equipment, and personnel at these larger stations. The site is also selected attributable to

the prevalence of Monsoon related severe weather in the designated market area (DMA)

defined by the Nielsen ratings[11]. The definition of a large market (see table 3.4) is based

on market size analysis done by Althaus & Trautman (2008) who:

> …follow the standard industry definition by referring to the number of television
> households served by each of Nielsen's "designated market areas" (DMAs).
> Market size, as we use the term, has nothing to do with the size of the geographic
> area served by a DMA or the number of different stations broadcasting within
> a DMA (p. 827).

The geographic size of the market is not how the DMA is determined but rather it is the

number of television households served. Also, the number of households is not

equivalent to the population of people as more than one person can live in a household.

Table 3.4

Definition of Markets Based on Size

Market size	DMA Rank	Number of Households
Small	102 – 210	0 - 299,000
Medium	31 – 101	300,000 - 999,999
Large markets	1 – 30	1,000,000 +

According to Nielsen (2014), there are 210 television markets in the country. A

list of the cities in the twelve largest television markets along with the number of

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[11] Nielsen uses the term designated market area (DMA) as its brand name for television
markets.

households (TV homes) and the percentage of the population is found in Table 3.5. The

numbers are for the 2013 to 2014 television season.

Table 3.5

2013-2014 List of Large Television Markets

Large Television Markets			
Estimates as of January 1, 2014 and used throughout the 2013-2014 television season			
Rank	Designated Market Area (DMA)	TV Homes	% of US
1	New York	7,461,030	6.442
2	Los Angeles	5,665,780	4.892
3	Chicago	3,534,080	3.052
4	Philadelphia	2,963,500	2.559
5	Dallas-Ft. Worth	2,655,290	2.293
6	San Francisco-Oak-San Jose	2,518,900	2.175
7	Boston (Manchester)	2,433,040	2.101
8	Washington, DC (Hagrstwn)	2,412,250	2.083
9	Atlanta	2,375,050	2.051
10	Houston	2,289,360	1.977
11	Detroit	1,856,400	1.603
12	Phoenix	1,855,310	1.602

The following year, in the 2014 to 2015 television season, the Nielson market

data showed that Phoenix went up a size in market into the 11th position, surpassing

Detroit (see Table 3.6 below). An interesting fact is that the total number of TV homes

went down by more than 20,000 from 1,855,310 to 1,834,360 in the 2014 to 2015

television season. This may be attributed to "cord cutters" (see chapter five findings page

84) or in other words those viewers who have cut their ties with cable television or

satellite and dish networks and are getting their information solely from on-line sources.

Table 3.6

2014-2015 List of Large Television Markets

<table>
<tr><td colspan="4" align="center">Large Television Markets</td></tr>
<tr><td colspan="4" align="center">Estimates as of January 1, 2014 and used throughout the 2014-2015 television season</td></tr>
<tr><td>Rank</td><td>Designated Market Area (DMA)</td><td>TV Homes</td><td>% of US</td></tr>
<tr><td>1</td><td>New York</td><td>7,442,270</td><td>6.539</td></tr>
<tr><td>2</td><td>Los Angeles</td><td>5,523,800</td><td>4.854</td></tr>
<tr><td>3</td><td>Chicago</td><td>3,477,250</td><td>3.055</td></tr>
<tr><td>4</td><td>Philadelphia</td><td>2,953,760</td><td>2.595</td></tr>
<tr><td>5</td><td>Dallas-Ft. Worth</td><td>2,603,680</td><td>2.288</td></tr>
<tr><td>6</td><td>San Francisco-Oak-San Jose</td><td>2,476,860</td><td>2.176</td></tr>
<tr><td>7</td><td>Boston (Manchester)</td><td>2,423,640</td><td>2.130</td></tr>
<tr><td>8</td><td>Washington, DC (Hagrstwn)</td><td>2,408,990</td><td>2.117</td></tr>
<tr><td>9</td><td>Atlanta</td><td>2,334,520</td><td>2.051</td></tr>
<tr><td>10</td><td>Houston</td><td>2,301,230</td><td>2.022</td></tr>
<tr><td>11</td><td>Phoenix</td><td>1,834.360</td><td>1.612</td></tr>
<tr><td>12</td><td>Detroit</td><td>1,833,320</td><td>1.611</td></tr>
</table>

Phoenix, residing at number 11 on the DMA list (Nielsen, 2014), was chosen for

this study as it sits comfortably within the prescribed criteria and was the only DMA of

that size located in the region of the country directly affected by the North American

Monsoon. Due to this uniqueness, it was singled out as a prime site for the case study.

Scene - Local English Speaking Television News Station

According to TVB Markets & Stations research the Phoenix DMA has 24 television stations associated with it ("Markets and Stations," 2015). Of these 24 stations there are five that produce and broadcast multiple daily newscasts in the English language. Four of the stations are affiliated with the national network broadcasting companies of ABC, CBS, NBC, and FOX. All four of these stations as well as one independent station are included in this study. The following table identifies the five stations where the weathercasters were employed during this study.

Table 3.7

Stations Studied in the Designated Market Area (DMA)

Phoenix Television News Stations (English speaking)

Display Channel	Call Sign	Network	Brand name
3.1	KTVK-TV	Independent	3TV
5.1	KPHO-TV	CBS	CBS 5
10.1	KASZ-TV	FOX	Fox 10
12.1	KPNX-TV	NBC	Channel 12
15.1	KNXV-TV	ABC	ABC 15

The facts are not on the side of a weather driven local television news market for Phoenix is commonly referred to as the "Valley of the Sun." It has a yearly average of

85% sunshine according to the National Climate Data Center.[12] The "Valley of the Sun" was a name "cooked up in the 1930s to boost tourism" (Thompson, 2004, p. 1) and this marketing ploy helped increase the population in Phoenix making it the sixth largest city in the United States as of the writing of this dissertation.

Weather centricity. Due to its sunny identity and comparatively tranquil weather during the majority of the year weathercasts in the Phoenix local news scene are not always given much importance; weather is typically not the central focus of the newscast. Throughout the year and particularly during the severe weather season weather coverage varies at each station. This is dependent on the amount of "weather centricity" found in the Phoenix weather scene at any given time. Weather centricity is a term derived by implementing Christians and Carey's (1989) sensitizing concept construct noted earlier. It also builds off the idea of "sensemaking" (Lindloff & Taylor, 2011) involving the process of analysis and interpretation.

Centricity is defined as being in a centric state or being located in or at the center according to the basic Merriam-Webster dictionary. The term takes on a richer definition when added to the idea of weather in a newscast. Weather centricity is when a weather event, mainly severe weather, becomes the center of the newscast. At its extreme, weather centricity is best seen during a severe weather event; it occurs when a local television station takes over all programing excluding other non-relevant news and even superseding commercial advertisements with weather. While extreme weather centricity is not very common in Phoenix, it did occur multiple times in 2014 and varied in terms of

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[12] This percentage is compiled from 101 years of data. There are three cities with equal or more sunshine: Las Vegas, Nevada; Redding, California; and Yuma, Arizona (NOAA, 2010).

amount of centricity at each station. For example, the flooding event of September 8, 2014, shut down Interstate 10 and other freeways in the Phoenix area for hours as record rainfall occurred. Local news programming of the storm event took over for the entire morning while the breaking weather news transpired. While this "wettest day ever in Phoenix" (Fritz, 2014) had high weather centricity by all local news stations in the market, other less dramatic days have different levels of weather centricity.   In typical Monsoon thunderstorm coverage, some of the local television news stations (Channels 15.1 and 12.1) were reported in researcher observation field notes to be highly reactive, even extremely reactive when referring to possibly damaging weather. A table of weather centricity is constructed based off the monitoring of news coverage and weathercasts at the local television stations.

Table 3.8

Emphasis on Weather at Stations Studied

Phoenix Television News Stations (English Speaking)

Weather Centricity - **Monsoon 2014**

Display Channel	Call Sign	Network	Weather Centricity
15.1	KNXV-TV	ABC	Extreme
12.1	KPNX-TV	NBC	High
3.1	KTVK-TV	Independent	Moderately High
10.1	KASZ-TV	FOX	Moderately Low
5.1	KPHO-TV	CBS	Low

It should be noted that the centricity levels are not quantitatively derived and do not statistically represent any of the percentages of coverage given by local stations or the amount of time given to weather in the newscast. The observations were also discussed with the weathercasters and the consensus among the chief meteorologists in the market at the time was that Channel 15.1 was extremely weather centric. The difference between lowest level of centricity and highest level of centricity is not meant to be completely antithetical. For example, the lowest station, 5.1 and the highest station 15.1, are not fully polarized along the hype versus no-hype axis (a term referred to by the chief meteorologists) as each station has a strong concern for weather and weathercasters. Table 3.8 is not to be misconstrued with good weathercasters at the top and bad weathercasters at the bottom for at the time of this study both channels 5.1 and 15.1 have chief meteorologists with the highest meteorological certifications (CBM) in the market. Another example of the non-binary (good station versus bad station) aspect is reflected in the commitment to put on a strong weather product as three of the five stations (5.1 low, 3.1 moderately high, and 15.1 extreme) do a Monsoon special report at the start of the Monsoon. All three stations take weather seriously and yet the time (e.g., amount of coverage spent in and out of news programming) and the resources expended (e.g., chopper shots, storm chaser cars reporters, multiple meteorologists on air at the same time, etc.) differs according to managerial constraints, available newsroom personnel, and producer preferences. Finally, it should be noted that the levels of centricity are not exact ordinal representations based off of a Likert scale but are a general taxonomy.

In review, the weather centric concept defined above and exhibited in Table 3.8 is a sense making construct allowing for a better understanding of the market dynamics and

newsroom managerial emphasis placed on the weather product in the market. The emphasis placed on weather as the central most important part of the newscast during severe weather and the variations noted in the five stations helps describe the complexity of the scene under study in this dissertation research.

Weathercaster working areas. Each television station studied has a weather work area, sometimes referred to as a weather center or weather set if used on-air as well as a news studio where the weathercast presents the weather both from the anchor desk and at the chroma-key. As the researcher, I observed in person three of the five television stations (3.1, 5.1, 15.1) while the other two stations' weather sets and physical working conditions were described in detail by the weathercasters who work there (10.1 and 12.1). A brief description of these weather center work arrangements in relation to functional aspects and the newsroom personnel will now be given.

Channel 5.1 had a weather center located in the actual news room. All of the working computers needed to prepare and present the weather were in the newsroom. The actual weather working area was no more than 50 feet away from the assignment desk. It was also in direct line of sight and within a loud speaking distance from the producers and directors. The news set was in a larger room attached to the newsroom and the main news desk was 75 feet from the weather center. This particular scene allowed the weathercaster to be in the weather center rather than the news studio and work during the newscast without disruption. The weathercaster was not impeded by having to wait for commercial breaks to do noisier activities like answering phone calls. While at the weather center working area the weathercaster had the ability to hear what was being discussed by newsroom personnel during severe weather. Having the weather center in

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the newsroom, however, made it rather difficult for the weathercaster to change graphics

or manipulate the weather computers while on the air in the news studio. This was

especially relevant during severe weather. This functional issue existed because the

working weather center was a considerable distance from the new studio and the chroma-

key. There were no prescribed weather center shots or ways that the weathercaster could

be at the weather computers and be on-air at the same time.

Channel 3.1 had the weather center considerably closer to the assignment desk

than Channel 5.1. The weather center was within 10 feet of the assignment desk and less

than 20 feet from the producers. There was the ability to have a camera and lights in the

weather center but more importantly there was also a functioning weather center that

worked inside the news studio. The weathercaster was able to see and manipulate all the

graphics and weather computer information while on the news set. The working weather

area in the news studio was less than 12 feet from the anchor desk. The chroma-key was

40 feet from the in studio weather set. As a result of these closer working conditions, that

is the assignment desk and producers located closer to the weather center and the ability

for the weather anchor or weathercaster to work in the news studio, the functional aspects

appeared smoother at 3.1.

At channel 15.1, the working weather center was in the news studio. There was no

detectable vocal contact and no direct line of sight to the newsroom or to the assignment

desk. Communication with newsroom personnel primarily occurred by way of telephone

and instant messaging. The weather center had lights and a camera so that reports could

be done live from the working, on-set weather center. Also, it was within 20 feet of the

anchor desk or news desk. Again some of the proximity issues that come from having a

functioning weather set/weather center in the news studio are that sound needs to be kept down during the newscast and that verbal interactions may be limited during severe weather.

Channel 12.1 also had a functioning weather set next to the news studio set. This gave the weathercaster the ability to easily change graphics during the newscast. The actual working weather center was on a different floor from the news studio which was on the ground floor. This made for a vertical separation which was different from the earlier noted stations. The onset weathercaster working area was noted to be more disconnected from the newsroom and the weathercaster office.

The weathercaster working area at Channel10.1 also had a weather center in the news studio. The weather anchor was able to deliver information and do direct promotions and teases while having their weather computer graphic items from the weather center displayed behind them. The same constraints in terms of limiting loud noise on the weather set in the news studio applied as they did at Channel 15.1.

Physical distance and access to equipment such as weather computers and the chroma-key are functional concerns. Additional concerns in the weathercasters working scene consisted of psychological issues of proximity. Feeling close to a work colleague, such as having worked with a producer for a number of years, aided in transcending physical barriers. Closeness, cohesion, and effective communication were not limited by physical distance but rather technology and synergistic teamwork permeated the weathercaster and newsroom scene.

A final factor that sets the scene is whether or not the weathercasters are referenced on-air as meteorologists. The stations in this study do this differently. For

example, the Fox station, 10.1, does not verbally refer to their weathercasters as meteorologists and rightly so as none of the weathercasters had meteorological seals or certifications. Other stations such as 15.1, 5.1, and 3.1 refer to all of their main weathercasters as meteorologists regardless of actual AMS certification. The image of a competent professional is reinforced with the word meteorologist as it is placed on the introductory graphic with the weathercaster's name at the start of the weathercast and is also verbally stated by the news anchor. Understanding the participants and who they are by definitional terms will now be set forth along with specifics on their demographics.

Participant Information

One of the greatest fears at the onset of this dissertation research project was that I would not get access to the individual weathercasters. I was concerned that they would not be available to talk to me, either because they had no interest in me or this research, or because their station did not want them to talk. The possibility of only getting one or two stations and just a few weathercasters to talk to was a legitimate concern. Fortunately, that was not the result in this particular case study. The high level of participation was partially due to the trust established between the weathercasters and me along with the promise of maintaining confidentiality. Each of the weathercasters were able to speak freely knowing that there were no repercussions for expressing their thoughts or feelings. To maintain this confidentiality the participants will now be defined by assigned pseudo names and their official working titles. Next, specific details on the demographics of all who participated in the interviews will be presented.

The Participants Defined

Each station has a weather team composed of television broadcast meteorologists (on-air personnel who are trained and certified meteorologists) and weather presenters (on-air personnel who present the weather but are not formally trained or certified in meteorology). There are also many other news employees (managers, producers, photographers, editors, reporters, etc.). The managers typically determine the title of each employee and who will be working in what capacity. Station management is not always interested in whether the presenter is a trained meteorologist as defined by Hill & Mulvey (2012) or if they are just a converted reporter, fill-in, or mixed role player such as a traffic and weather person. Consequently, there tends to be a "blurry line" delineating who is a meteorologist and who is not in local television news. There are ideological differences between "old school" empirical meteorologists and present-day weather forecasters.

> "Weather forecasters are different from the older generation research meteorologists in that they generally do not have PhDs. Present-day weather forecasters' professional training and practice—and, thus, their perspective and subculture—overlap partly with those of the above-described older empirical research meteorologists" (Lahsen, 2013, p. 745).

Nevertheless, for definition purposes all who go on-air and present the weather will generally be defined as weathercasters. Those who have formal training and certifications are typically referred to as broadcast meteorologists, and those with non-certification or no formal meteorological training are weather presenters or forecasters. All chief, morning, and weekend weathercasters are also referred to as anchors as they typically hold a position in the newscast that puts them on the news anchor desk and they also are usually an integral part of the closing or opening of the news. While stations do

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put the name of the weathercasters with the main news anchors in the opening or introduction to the newscast (e.g., "You're watching Channel Y news with [insert news anchor name(s), weather anchor name, and sports anchor name]") this is becoming less of a part of the program. Discussions with promotion producers pointed out that this reduction in the promotion of the talent's name, face and image is in part due to time constraints, frequent personnel changes, and the push to multiple platforms. Producers note that talent name recognition and formal show opens appear to be of less prominence, and of less use than they were five years ago. (T. Martin, KPHO Senior Promotion producer, and C. Stanton, News Producer, personal communication, July 18, 2014).

In this study, the use of each individual weathercaster's name will not be included in order to maintain their privacy. Referencing the individual by way of their position at the station is done sparingly because the confidentiality of each individual is paramount. Specific connection to station affiliation for each weathercaster will not be included. Also, due to the design of the study and IRB approval the actual names and specific details of each participant are not revealed in this report to ensure the confidentiality of each of the weathercasters' responses. An online random name generator was implemented to come-up with pseudo names for the weathercasters. Table 3.9 has the list of pseudo names of the weathercasters who participated along with the number of in depth elite interviews conducted.

Table 3.9

Pseudo Names and Interviews

Weathercaster Pseudo Name	Number of Interviews
Alice	3
Bob	3
Carlos	3
Dora	1
Eddie	3
Floyd	3
Jane	3
Jeff	3
Julie	3
Kenny	3
Leah	3
Nick	3
Patty	3
Sandra	3
Sara	3
Shelley	3
Vicki	3
Totals **17**	**49**

Typically, a station has one or more broadcast meteorologists and anywhere from two to five other weathercasters including fill-in and back-up weather replacements. There are other ancillary players as well such as weather producers but none of the stations studied at this time had a clearly defined weather producer. In years past some of the stations did employ weather producers, but during this dissertation study it was found that all of the weathercasters produced their own on-air weather product in terms of graphics and information. In addition to weather producers there are weather related reporters as well. Informal discussions were done with some of those reporters but the primary objective was to obtain information directly from the weathercasters. For the purposes of this study the parameter for each selection was personnel who were

employed full-time to do the weather on air. Specifically they were chief, morning, and weekend meteorologists or weathercasters.

Interviewed Participants Demographics

All participants interviewed and observed in this study were in the Phoenix television market. There were 18 weathercasters employed in the market of study that fit the above noted parameters. Interviews were conducted with 17 out of the 18 weathercasters. Multiple interviews were done with 16 out of 17 weathercasters. One weathercaster left employment in the business after the first interview. The first objective was to obtain interviews with all of the main or chief meteorologists at the five largest television stations that produced English speaking newscasts in the market. Formal interviews were obtained with all of the chief meteorologists except one who refused to be interviewed despite multiple requests and interactions with this individual. Despite this lone holdout, the goal of conducting multiple in-depth interviews at three different times of the year was accomplished as access to almost all of the morning, weekend, and chief weathercasters at all five television stations was achieved. Weathercasters were interviewed at their respective stations if the weathercaster wanted to meet there. They were also interviewed in neutral settings such as Starbucks, various restaurants, and their homes to avoid being surrounded by work associates or managers. The rich flow of information coming from the interviews composes the majority of the dissertation research but in order to understand who the weathercasters are a review of specific facts about them will be done.

The following are some of the basic descriptive statistics of those who were interviewed while maintaining their confidentiality. The areas of gender, age and experience will be displayed in that order. Comparisons will also be made to give a better understanding of the population of weathercasters studied.

The first item that helps describe the group studied is gender. In looking at the basic demographics some interesting general information becomes evident. The women in this study were the slight majority at nearly 59% (see Table 3.10).

Table 3.10

Gender of Weathercasters Studied
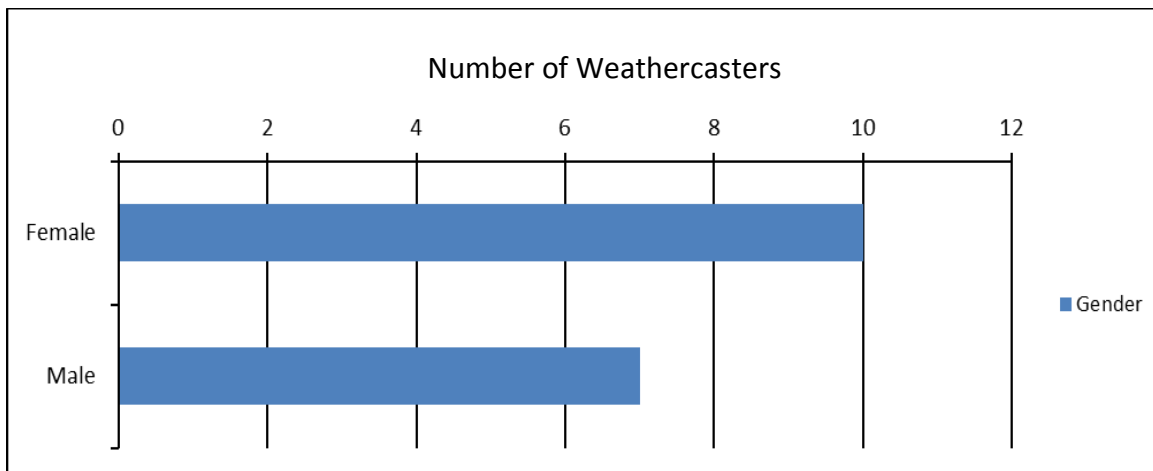
The industry of television weathercasting has flip flopped over the years in terms of men to women with the ratio of women to men rising over the past two decades (Henson, 2010). In terms of chief meteorologists the weather broadcasting business has been predominately male (Perryman & Theiss 2013), and the same was the case in this study as three out of the five chief meteorologists were male. A unique note in this

dissertation study is that two of the chief meteorologists in this large television market are female. Also, one of the chief female meteorologists is a minority of African American and Hispanic descent. A woman also held the highest certification: the difficult and rigorous Certified Broadcast Meteorologist seal issued by the American Meteorological Society. There were only three meteorologists in the entire market, two who were formally interviewed and myself, the researcher, who had the CBM certification at the time of this study. The other was a male chief meteorologist.

The age of the weathercasters interviewed was primarily in the younger demographic with 11 out of 17 being in their 30s and younger (see Table 3.11 – Age).

Table 3.11

Age Groups of Weathercasters
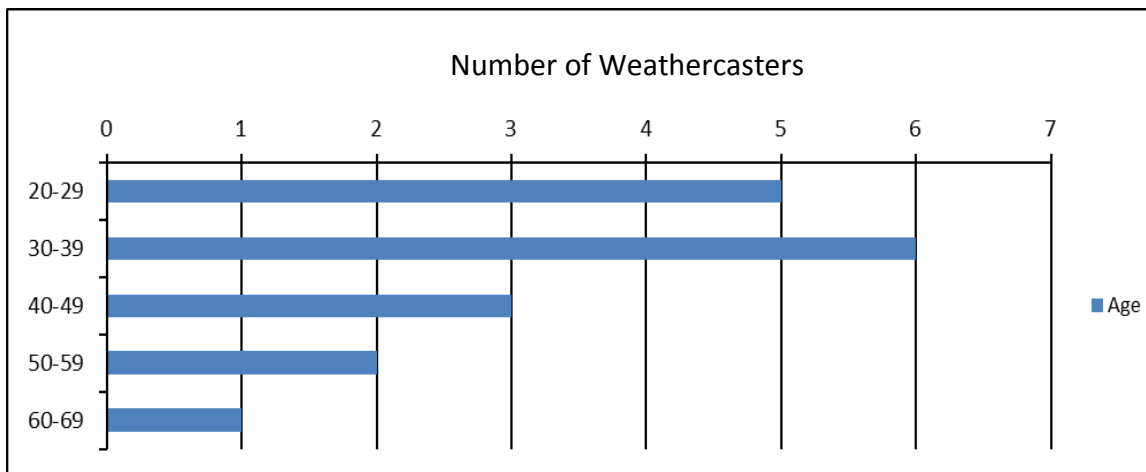
Of significance was the age to gender ratio. All ten females were found to be in their 30s or younger while men were found to be in their 40s and older except for one male. The youngest male was in his 20s but had obtained the advanced degree of Ph.D.

The overall demographic of age and gender information reveals that 65% were in their

30s and younger with all of these younger weathercasters being women (see Table 3.12).

Table 3.12

Age Groups and Gender
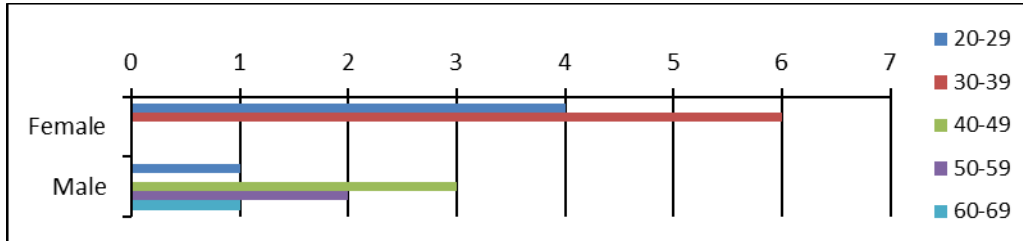
As would be expected in a younger population of weathercasters 42% of them had

less than ten years' experience.

Table 3.13

Years of On-Air Weathercasting Experience
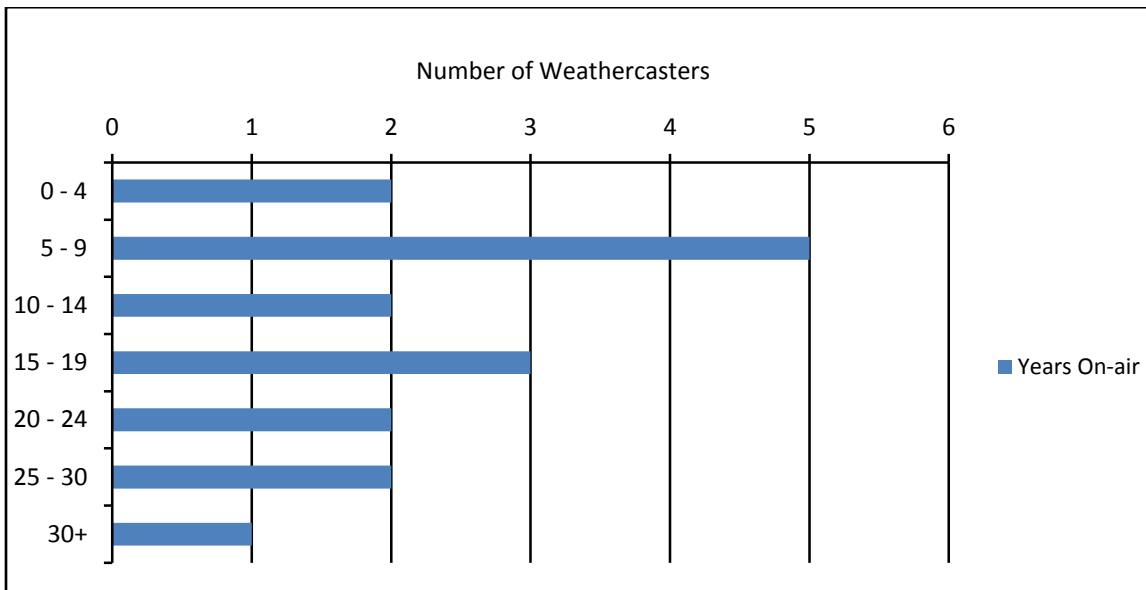
Also, there are fewer years of experience with the females on-air as noted in

Table 3.14.

Table 3.14

Years On-Air and Gender
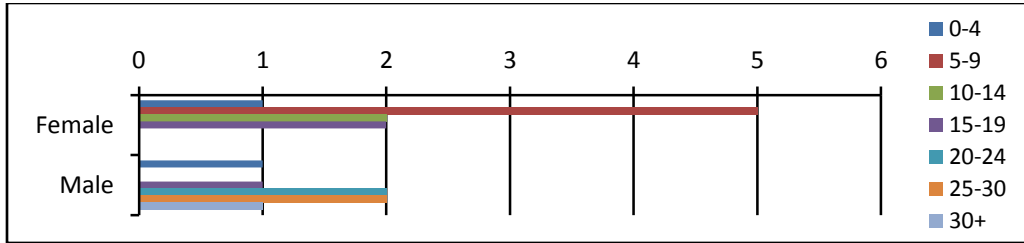
Overall, the descriptive statistics and percentages of the weathercasters studied

indicate who is represented and give details that are applicable and needed to understand

those interviewed. The participants working in the local Phoenix television news

broadcasting system of 2014 are not a demographically homogeneous group of peers.

CHAPTER 4

FINDINGS

TECHNOLOGY & CULTURE IN LOCAL TELEVISION WEATHERCASTING

There are two main areas of this chapter organized around the research questions concerning technology, routines, rituals and culture. The first area contains the findings that relate to the questions of weathercasting technology and future changes. Interviews with the weathercasters about the technological adaptations that have occurred in weathercasting brought forth 103 excerpts coded in the Dedoose qualitative software program. The excerpts are derived from specific comments made during the formal elite interviews. They were then analyzed and organized into a chronological order concerning technology: moving from the past, to the present, and finally to the future.

The second area focuses on the findings relevant to the questions of weathercaster routines, rituals, and culture. The routines and rituals are evident in observations and in the comments made during in depth interviews with weathercasters. There were forty-seven specific excerpts derived from the weathercaster comments, analyzed and coded in the Dedoose data management software program, which were based on the routines and rituals interview questions. Out of the forty-seven excerpts, twenty related to unique and specific routines and rituals performed by weathercasters and twenty-seven related to other routines and rituals such as those noted by Ehrlich (i.e., monitoring the opposition). In addition to these forty-seven excerpts, eighty-six relevant excerpts specifically about weather culture were found and extracted from the interview transcripts. Exemplary

excerpts and observational findings will be now presented in the order noted - technology followed by routines, rituals, and culture.

Technological Change

Television weathercasting presentation technology has evolved dramatically over the past half century from standing in front of a hand drawn map with a wooden pointer stick to interacting with multiple computers in a digital virtual space - Chroma-key. These changes have yielded a dynamic working environment and a specific skill set needed to be proficient in the television news industry. An examination of the key findings, in specific exemplary excerpts, will take place after a brief review of the technology research questions. The excerpts will also be supported with relevant facts, artifacts, and references following the chronology - moving from the past, to the present, and finally to the future.

Research Questions on Technology

Research question 1. What are the thoughts and perceptions of weathercasters concerning technological advances encountered in their working environment in the past and in the present?

Research question 2. Given the changes from the past to the present, what are the thoughts and perceptions that weathercasters have toward future technologies?

Building on the Past

      This section will explore the findings, artifacts, and weathercaster excerpts/comments about changes in presentation technology focusing on equipment used in the past. The comments vary depending on the age of the weathercaster and their experience. The findings support the idea that the shift from older presentation technologies to newer forms of communication technology creates new skill sets and advancements.

      Older to newer forms of communication. After analyzing the weathercaster interview data, it was found that older (50 years of age or higher), more experienced weathercasters have more to say concerning technology and the past. Even though older respondents made up over 50 percent (50.6) of the technology excerpt comments, almost 30 percent (29.7) of the comments were from those in their 20s and 30s and nearly 20 percent (19.7) of the comments were from those in their 40s (see Table 4.1).

Table 4.1

Age of Weathercasters & Percentage of Technology Comments

Percent of technology comments
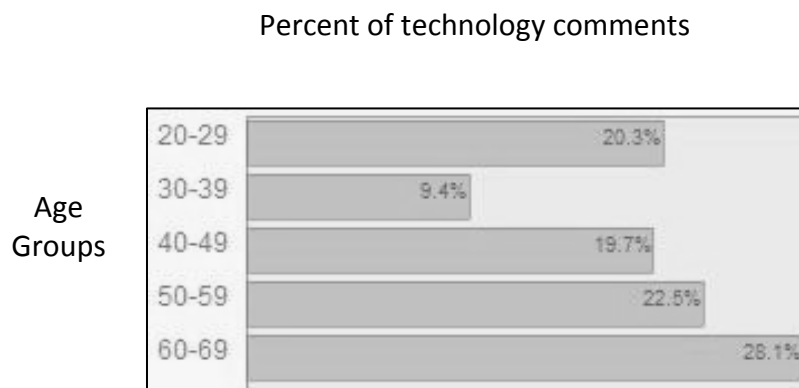
Interviews conducted with the older, more experienced weathercasters reviewed some of the important historical changes that have taken place. Specifically, information about government sponsored weather services and technologies were seen to be a vital component of the television weathercaster toolbox. Weathercasters noted that they interact with the National Weather Service (NWS) often and attend regular workshops held in Phoenix.

> I'd go to their spring and winter ones [workshops]. I do like to go to those […] because they're looking at stuff [weather technology], a lot more than we've got a chance to look at, so I always feel like you always learn something and that you always get sort of a new insight you can use (Weathercaster Julie).

From the advent of U.S. television weathercasting in the 1940s there has been a close relationship between television weathercasters and governmental agencies such as the U.S. Weather Bureau[13]. It was found that weathercasters in Phoenix relied extensively on the U.S. Weather Bureau for their information. One of the oldest active working weathercasters interviewed during this research period pointed out how much control the government had and how little technology and forecast information was available to weathercasters in the past.

> There was very little technology for the weatherman. All of the technology belonged to the government, and all of the technology was at the Weather Service. We just had to rely on reports that they put out several times a day talking about the weather nationally and talking about the weather locally. And, back when I got started there were a lot more reports than there are now. I know weather is everywhere. I know you can see weather anywhere you can pick up your I-phone and you can find it anywhere. But, the actual reporting of the weather, the actual discussion - meteorologists sat down and discussed and then

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[13] When it was first created in 1890 it was known as the U.S. Weather Bureau, but it evolved into a much larger organization and was officially named the National Weather Service (NWS) in 1970. For a complete timeline of the history of the National Weather Service (NWS) see their online website at http://www.weather.gov/timeline

put out as a message to the weathermen around - as it was done a while back…we'll that doesn't exist anymore (Weathercaster Jeff).

Weathercasters also noted that what exists has evolved from actual face to face interactions and phone call discussions into digital forms of communication including online discussions along with emails and web pages facilitated through government generated (National Oceanic and Atmospheric Administration - NOAA) resources. The local NWS forecast office has a team of meteorologists who respond to questions from the broadcast meteorological community. They also send out detailed messages. The weathercasters noted that a chat service named Pidgin[14] is replacing private conversations that the weathercasters have with the local NWS office. The chat service helps facilitate the flow of communication to many individuals as a group but weathercasters noted that it can create a limited view of the forecast and a form of groupthink (Janis, 1972).

Presentation technology artifacts and advancements. The weathercasters and station engineers also noted that just as communication technologies have quickened and improved with the Internet, so has the technology which is used to present weather on-air. An example of early simplistic presentation technology was found in an old black and white artifact photo discovered when meeting with Jon Thorwaldson, a supervising engineer at KPHO in Phoenix. The photo shows a female weathercaster circa 1967 in the weather presentation area with the then current state of the art presentation technology and exhibits how black markers were used to hand draw meteorological information and numbers on basic maps.

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[14] Pidgin is a free universal chat program used by NWS for emergency management partners, including weathercasters. NOAA, the larger organization in charge of the NWS, gives instructions on how to install and configure Pidgin at https://nwschat.weather.gov/emPidgin.php

Earlier recorded formal interviews conducted with older, retired weathercasters from the 1950s such as Bob Davies (weatherman for KOOL-TV Phoenix, AZ) noted the use of grease pens and Plexiglas boards – forms of new technology in their time (B. Davies, personal communication, April 30th, 2012). Dewey Hopper, a well-known weatherman in Phoenix, Arizona, in the 1970s noted the use of plastic and cardboard symbols prior to the development of magnetic icons (D. Hopper, personal communications, April 4th, 2012). The use of magnetic cutouts on a metal board became part of Hopper's weather presentations in the mid-1970s as this technology became more popular. An artifact consisting of one of these magnetic icons was found in the news studio at KPHO embedded high inside an air conditioning vent. It was noted by the production crew that it had been tossed up into the vent in the 1970s. The icon was a magnetic snowflake (missing a few extending arms) seen as the white object in figure 4.2.

Figure 4.2

Magnetic snowflake weather icon (circa 1975) in air conditioning vent

Photo taken by author in KPHO news studio June 2, 2014

Using pre-computer generated graphic technologies was not highly complicated but as the computer age came into existence in the 1980s the technical side of getting the graphics ready for a forecast was born. The following weathercaster points out some of the difficulties in working with weather computer technology in the past.

> …when I first started… the technology was, a lot of it, was literally recording off a satellite and that was our satellite map. And if we wanted to build a graphic we had a tablet and you, you'd connect the dots to do the cold front and then the dot for the triangle. And if you forgot to do one dot on that whole thing and you hit 'execute' it would bleed the whole thing and you'd have to start over again (Weathercaster Nick).

With computer advancements in the 1990s weathercasters were able to do more with the technology but it involved being graphically artistic and computer savvy. The following excerpt by a veteran weathercaster points out how management wanted graphics to tell the story.

> I had the same conversation with the news director one time, and he was complaining about what he was seeing, "You're such a great story teller but you're not telling a great story with what you have behind you." And I looked at him, I said, "Look I'm not a graphic artist" …and you've got these machines that back then were not user friendly at all. It would take a computer expert to make a great looking map. The technology has come so far now that you don't have to have a lot of experience to make a great looking map to tell a great weather story (Weathercaster Carlos).

The excerpt points out the fact that high quality graphics were needed to become a compelling weather storyteller. Improvements in technology have made this possible and much easier for the weathercaster of today. Yet there is a constantly changing environment of technology that rapidly alters the way graphics are made and presented. Consequently, the weathercaster needs to learn the latest technology, which can be trendy

at times, especially when looking at touch screens as will now be examined in the following section.

Present Applications and Weathercaster Perceptions

This section examines the current technological changes noted by the weathercasters. It focuses on five specific areas: (a) the interactive aspects of touch screens, (b) the use of mobile phones and cameras by citizens to show weather events, (c) the cord cutters, (d) vender supported graphics, and (e) the utilization of mobile backpacks during the Monsoon.

Interaction and touch screens. The past has led to present changes involving live on-air interactions with computer technologies and screen use. At the onset of the first wave of television sets in the 1940s and 1950s screens were quite small – three to twelve inches[15]. Currently there are flat screens and large screen TVs in sizes starting at around twenty inches and going up to over ninety inches. Despite these large screens, many people are getting information in the form of video, text and pictures off of very small smart phone screens. A movement to make these mobile screens larger has occurred with the IPhone and Samsung phones but ironically the technology used for the small touch screens is now creating the need for a new skill set to be utilized by the weathercaster. Perceptions about these changes were manifested in the following excerpt from this weathercaster who sees the role that interactive technology plays in storytelling today.

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[15] See, TV Screen Magnifying Lenses. (2013). Retrieved August 16, 2015 from http://www.tvhistory.tv/TV-Lens.htm.

When people saw that [technology interaction] happening, the news business said, "If we had our news anchors do what people are fascinated with right now, they'll pay attention," and they did. So you needed people that were good in front of a chroma key wall to do that for your station and I just happened to be at the right place at the right time. I think it [touch screens] is a fabulous technology and I think it's a great story telling addition to just presenting a normal story. And I think it's all tied into smart phones. Because that is now what people are used to seeing in front of them, and when they see that on their newscast they pay more attention (Weathercaster Carlos).

Moving from the small smart phone screens to the larger television screens has also been a part of the movement taking place with the audience. The technology change also increases the ability for the average person to get pictures they take on their small screen smart phones shown on the air.

Citizen weather reporters. It was observed that viewers or citizens with smart phone cameras are able to post their pictures of reality on a television station's website and get those pictures into a live news or weathercast. During this study, it was found that the pool of public or citizen reporters is increasing and specifically being used for verification of weather information. While helpful, this technology can also cause false perceptions of what the facts are and create difficulties for the people responsible for verifying those facts. Observations about this "fact finding" aspect of the technology and the possibility of incorrect information or false information being disseminated were made by this weathercaster.

But now in reality, everyone is a weather forecaster with a smart phone. Because there are thousands of people taking pictures and videos of thunderstorms and dust clouds and haboobs and what have you, and instantly posting them. And now all of a sudden you've got a meteorologist that's focused on the five o'clock or not even actually on the air but maybe there's five or ten other pictures that people are posting to the station's website saying, "Look, there's a tornado here," well there's not a tornado. But all of a sudden somebody has posted it, and now people are re-

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posting it and you don't have the staff that it takes, to get the correct factual information out there. That's the great thing about technology but then that's the bad thing about technology. It's that you still have to have that human interaction and human oversight for the message to be correct (Weathercaster Carlos).

Other weathercasters also consider this a potential problem when adding social media such as Facebook or Twitter to the flow of information as it can twist the message.

One of the biggest things for us in weather is having the ability to have weather data at your fingertips. But also everybody has a camera in their phone now. They're taking pictures or they're taking video of weather as it happens and instantly uploading it to places like Facebook or through email that can get it twisted right away (Weathercaster Kenny).

Twisting - changing or altering the facts - may not be the final byproduct of viewer photos as eventually enough responses by other viewers and by experts such as on-air weathercasters and NWS meteorologists can clarify the event or picture. For example, dust devils are often mistaken for tornados and can appear as tornados when they get large and mesh into clouds. Typically these are called land spouts. Land spouts are like water spouts in that they originate from the land (or water surface in the case of a waterspout) and go upward, whereas tornados come down from the clouds. The damaging wind and force from a tornado is typically much greater than from a land spout or water spout (NOAA, 2014).

Figure 4.3

Citizen weathercaster photo

Tornado sited near Desert Center

The picture above is of a land spout that was later confirmed to be a tornado near Desert Center, California and was posted on the NWS Phoenix Facebook page (Jerke, 2015). A follow up post on the NWS Facebook page clarified how the viewer photos and audience observations were then confirmed by the experts.

> After reviewing radar, eye witness reports, and even an aircraft report, we have confirmed a tornado occurred near Desert Center, California (about 40 miles West of Blythe, CA near the AZ/CA border). A rotating cloud feature was reported from an aircraft pilot which was then confirmed through broadcast media and viewer photos. At this time we have not assessed nor have we received damage reports, so therefore we haven't assigned an EF-rating to this. We will continue to work a formal write-up in the coming hours/days.[16]

News audience members can now become weather reporters as they are able to send and post their weather related pictures online. Verification of viewer photos by experts keeps the information from getting twisted. Television weathercasters now have a much larger resource or team of storm chasers that they can access by way of new technology.

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[16] It was later determined to be an EF0, the lowest type of rated tornado (US National Weather Service Phoenix Arizona's Page, 2015).

Cord cutters. Be it a severe weather event such as a tornado or a basic daily weather forecast, younger and more technologically proficient people are getting most if not all of their weather and news information online. They are called cord cutters.

> …"cord cutting"—namely, doing away with pay TV and using Internet-based services to get all your "television" programming. No more paying a huge monthly fee for thousands of hours of TV you don't watch. Instead, pay individual services for a la carte programming. It's almost like paying for just what you watch (Griffith, p.1, 2015).

Given the present trend, this is what a veteran weathercaster perceives the audience of cord-cutters to be,

> You talk to kids today, most kids are cord cutters. They're all cutting the… everything comes off the internet. We're learning… we're training ourselves individually to create our own stations. In the old days, the stations told us what to watch. Watch Happy Days and after Happy Days we have Laverne and Shirley then we have the news and now, what do you want. You start talking about 'hey, you remember that old movie from the 1970s?' You can pull it up on YouTube and you connect it to your computer, connect it to your TV and you watch it. All of the sudden, did you hear about the Gaza strip today and boom. You're falling, you're in free flight, and you're free style, you're doing whatever you want and whatever I feel like today. I think even with the Internet, they're not coming back. They're not hitting [our] news or any of the stations at exactly 4 in the afternoon every day and then at 7. They're everywhere (Weathercaster Eddie).

This trend produces a new reality for weathercasters and creates the importance of generating your own brand, your own online image and following or audience, which is not dependent on traditional on-air broadcasting. The technology adopting weathercasters see the need to push content and their image to Facebook, Twitter and other social network spheres.

Vendor supported computer graphics. Certainly having a presence on social media and a large following is important to maintain and grow an audience, but social

media skills are quite different from the skills needed to operate and manage

sophisticated weather graphic computer systems. Large computer vendors such as WSI –

a professional division of The Weather Company – sell, maintain, and service the

weather computer systems used by every station in the Phoenix television market studied

in this dissertation. In the past decade there were two main companies used for broadcast

television weather computer systems in the Phoenix market but a merger of WSI with

Weather Central created one giant company in August 2012.[17] The support, training and

computer capabilities provided by WSI allow weathercasters to produce the latest

advanced graphics. Advanced weather computers give the television viewer high

definition television graphics that weathercaster Carlos referred to as digital computer

eye-candy. Weathercasters are trained on the systems to be able to maximize the look of

the on-air product.   Here is what one weathercaster noted about how management

wanted the graphics used along with the weathercaster's personal perceptions of what it

means to be good with graphics versus being good on-air.

> We don't want you to show off the technology. We just want you to make it
> slightly more simple so we won't get lost in all the craziness. But it can get crazy
> – it's a huge tool that you can use… one thing I think is cool is the 3D radar. No
> one knows, the viewer at home doesn't necessarily know much about it. But it
> still drives on the point like this storm is a lot different than this one over here. So
> they can visually see things. Because I think some people are really good with
> graphics, some people are really good with their on air like presence. So I think
> that the big tradeoff is between being able to use the technology and being able to
> present the technology. That's always the trick (Weathercaster Floyd).

Weathercaster Floyd highlights the fact that the line between being a good presenter and

a good graphic artist is tricky. He notes the fact that management wants him to make it

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[17] The merger of the two largest television weather computer companies (WSI and WCI)
puts them with the Weather Company which owns the Weather Channel (Hlozek, 2012).

simple and not get too crazy, but he points out that it can get crazy and highly

complicated, especially with sophisticated technologies such as 3D radar.

Mobile backpacks in the Monsoon. The balance of being able to use technology

and present it well also relates to mobile backpacks that are utilized by reporters and

storm chasers. Certainly weathercasters who develop both abilities - to be an expert with

weather computer technologies and also have personable on-air talent - do well in the

studio but many are out in the field using mobile backpacks. When severe weather occurs

during the Monsoon, storm chasing is of greater importance. One weathercaster who has

seen this trend escalate in the local weather reporting scene noted this when asked how

technology plays more of a role during the Monsoon.

> Yeah, we have a couple of things. We have one guy that would normally go out, a
> photographer and the reporter's in the passenger seat, and we have a camera that's
> hooked up to one of our news vehicles and they call it [brand name]. They are
> able to send that signal back if they are basically driving, like storm chasing or
> whatever. You don't see the reporter on the air. You hear his voice and you see
> the picture …live feed coming from the car. I don't know what technology they
> use for that or how they send the signal back to the station but they use that. They
> have a backpack or something. Again, I've never used those so I don't know what
> it is but they have that to send back a live signal and then they have the
> microwave and the trucks (Weathercaster Sara).

Weathercaster Sara refers to a currently new technology - backpacks - such as the TVU

pack and the LiveU pack shown in the photos below which uses cell phones to send back

audio and video signals.[18] This has made storm chasing more achievable because the

reporter or weathercaster does not have to be at a fixed position with a live truck that has

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[18] According to TVNEWS Check: The TVUPack TM8200 transmits video through multiple
independent 3G/4G/LTE, WiFi, WiMax, BGAN, Ka Band/Ku Band satellite and microwave
connections — aggregating all available bandwidth to ensure a resilient transmission and high
picture quality (Beacham, 2014).

a microwave or satellite dish sending a signal back to the station. The mobile ability of the backpack is conducive to the ever changing aspects of severe weather that pop up quickly and randomly during the Monsoon.

Figure 4.4

Mobile live backpack for reporters and storm chasers

LiveU photos taken by author at KPHO

Most importantly, the backpack adds a much higher level of safety to the process of sending a signal because a typical live truck has a mast with a microwave dish that needs to be raised to send the signal. The raised metal mast is not safe during lightning and can be struck during the Monsoon. While the weathercasters interviewed in this study primarily work inside at television station news studios some did note that they have experience working with this new technology for live shots. As technology progresses and the immediacy of getting the latest information on-air or online faster than the competition continues, there will be more weathercasters and reporters using these kinds of digital backpacks. The reality is that the weathercaster can give the report from

many more locations, at almost any time, with limited amounts of equipment, including doing the weathercast from their own home. With the new mobile backpack technology, the computer technologies that apply to the in studio presentation of graphics at the green screen or on flat screen monitors are not the only types of new technology in operation. Multiple digital forms of weathercaster presentations are increasing. This leads to the next question; what will the future of weathercasting be like given the ability of technology to not only support but also to supplant weathercasters? The excerpts on this area will now be reviewed.

Future Changes

Comments and observations in this section will focus on three areas of future change. They are (a) the new technology, *Ignite*, [19] reduces workforce, (b) digital replacement of weathercasters, and (c) the reduction of self-worth due to business environment changes.

Ignite reduces workforce. Prior to examining the weathercaster excerpts about the future a brief set up of the current state of change taking place in the studied television stations will occur. Discussions with and observations of news and weather personnel reinforced the fact that new types of broadcasting technology have a powerful influence on the decision making of news managers and television station executives. For example, it was observed that two stations (Channels 3 and 5) were in a merging process at the time of this study. Channel 5, a Meredith owned station, bought the Belo

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[19] According to its manufacturer, Grass Valley, "the Ignite integrated production solution is the industry's first and most complete link between the control room and the newsroom […with] single-operator capabilities" (Grass Valley, 2014).

station Channel 3. Prior to the merger Channel 5 had implemented the production technology called Ignite.

The Ignite technology allows automation to occur in the live on-air production of news and was seen to reduce a television production news staff down to just one or two people for a single newscast. Typically, there are four to five times that many people needed in production to get a single newscast on-air.   This technology reinforces the fact that human jobs can be replaced with more efficient computers and machines such as robotic cameras that eliminate the camera operator and work in conjunction with an automatic switcher - Ignite. Given this backdrop of new and innovative production technologies, discussions with the weathercasters occurred about the consolidation and automation of weathercasters.   While many were skeptical that human weathercasters could be replaced by a computer, one weathercaster did see the reality of this present trend toward a reduction in personnel.

> But I do think that there is probably a day when you might have one person doing weather for the whole station and they record it and it's on all the devices. So you have one person, so you, you know, now we have four people on staff. But that starts to dwindle with this technology. I think you could see something like this but I think that the real person will always take over (Weathercaster Eddie).

Weathercaster Eddie accentuates the dilemma brought about by new presentation technology. While he can see the possibility of having his job automated and reduced from a team of four people to one, he also sees the importance of a "real person." The importance of having a human still supersedes the idea of being outsourced to technology. This possibility of being replaced by a machine will now be further explored.

Digital replacement weathercasters. Certainly the idea of dealing with a
computer created version of a weathercaster, a virtual or digital weathercaster, does
sound creepy or too artificial to become a reality. "My first thought is… do you like it
when you call something and automated things talk to you? No! We all hate it, don't
you?" (Weathercaster Leah). Yet despite this disdain for robotic talking voices and
devices, some of the weathercasters are questioning the future and point out how it can be
automated or attached to the "official" government (NWS) forecast.

> I don't know, with the technology these days nothing really surprises me, it
> wouldn't be surprising if the weather eventually goes to that and they just take the
> National Weather Service forecast and just have a little guy up there and it's not
> really anybody. I mean, honestly, but I don't know, I think it's better to have the
> actual person in there (Weathercaster Laura).

The debate about what is better for the audience, a human or a computer
generated digital source, is also correlated to information and trust elements. The
automated information source could be better, more up to date, and more accurate
whereas the human may exaggerate, embellish and mislead. The present and upcoming
"cord cutters" do not appear to have a need to get a human element involved. They want
the facts and they want them fast. In contrast, the following weathercaster laid out an
excellent case supporting the way the human element has historically been so important
in weathercasting and made light of the notion that a weathercaster could be seen as an
avatar or a computer generated cartoon.

> On the one hand I look at how I've been able to keep working and I think …if
> somebodies got an iPhone they had access to everything I know. There is no
> weather data that Joe Blow can't pull up on his phone, from very in depth info to
> just the forecast. It's always been that way. You could pick up a local newspaper
> in 1968 and get the forecast. It's right there. There has to be some value in making
> that connection with the person on television. I don't know, maybe I just have an

over inflated sense of my own abilities or my value or whatever you want to say. I don't think there – in print, this will look horrible. All I'm saying is that I don't think that there are that many people that can do what we do. In other words, if you're successful at being a [weathercaster] then there's a reason for it and it's not because … No one ever comes up to you and says that perfect meteorological idea, its rarely that. It's rarely that 'you nail that forecast every week' or 'the way that you explained that polar vortex was awesome' I hear 'you're so fun' or 'you and [name of co-anchor], you guys make me laugh' or 'you warm me up'. That's usually what it is. I guess if my only job was to deliver numbers to people then I would be worried. I feel like, I'm [age in years of weathercaster], by the time that they really can create someone who looks exactly like me and thinks as I do or as funny in the way that I am, that will be generations down the road so. Interesting…for sure…I think it's a cool idea. I can see its web application or its smartphone application. I would get a charge out of that honestly. If you could pop me up on the [station name] app and a cartoon version of me would pop up, I could see how as an add-on it would be pretty cool. Who wants to see a cool cartoon of themselves, raise your hand? (Weathercaster Nick).

The observations made by the weathercaster above indicate how invaluable the weathercaster perceives his role to be in the overall news product. Yet the importance of the individual human weathercaster is directly related to business profits and the changing economic environment for local television news broadcasters.

       Business environment and self-worth. It was found that the consolidation of resources and the streamlining of operations, to reduce operating expenses, is a managerial objective at the media companies studied. An example was when local Phoenix station Channel 12, a Gannett owned television station that also owned the main local newspaper (the Arizona Republic) went through a convergence process as the print and newsroom operations and cultures merged (Silcock & Kieth, 2006). The market environment brings about an efficiency mentality - what can be done to increase productivity with less cost and fewer resources? This business working environment was observed in the television stations studied. It was perceived as a climate of fear or a lack

of security as to who will be working where, and when, in the market. Informal interviews and discussions with the weathercasters about talent contracts and negotiations about the price and worth of on-air talent supported the view that weathercasters perceive themselves to have a high self-worth. This high self-worth was noted by weathercaster Nick above when he stated, "…maybe I just have an over inflated sense of my own abilities or my value or whatever you want to say […] I don't think that there are that many people that can do what we do." As would be expected, the findings show that becoming obsolete as a weathercaster is an idea not very welcomed by the weathercasters as it furthers the undesirable notion of a lack of self-worth. The following weathercaster excerpt reflects this as it points out the importance of having a personal connection to the weathercaster.

> I guess my question is… what's the point of the virtual person? Like, just give me a graphic with the data on it. Because, for me, the only… I guess point of having the person there is to make a personal connection so if the person is not there, why would I want to connect with a robot? (Weathercaster Shelley).

Overall, the findings in this area indicate that the weathercasters presume the idea of being replaced by a computer or robot to be preposterous as it reduces their self-worth. Yet given the highly automated evolving environment of news production technology and the business environment of greater efficiency, the need for humans as weathercasters appears to be diminishing especially with the advent of weather apps (Li, Reinaker, Cheng, & Luo, 2015; Nagle, 2014). Li et al., reported over 150 million users of weather apps with over 2 billion checks of weather each day in 2015.

Summary of Technology Findings

The weathercasters perceive that there is a portion of the audience not needing to make the personal connection with an actual individual who will give them their weather report. Along with this separation from the human presenter, viewers are becoming more participatory and interactive as current weather computer vendor technologies support viewer photos and videos, allowing viewers with a digital camera and access to the Internet the ability to show pictures from their own perspective. Storm chasers are now able to use portable backpacks to go live from within a severe storm with less risk to the reporter's life. The findings also show that weathercasters see the younger generation, including but not limited to millennials, as being cord-cutters and non-viewers of local television news. Additional advancements driven by technology bring the content and functionality of the small mobile screen to the larger television screen, with touch screens being used on-air and viewer content being displayed in television weathercasts.

Finally, the findings show change coming by way of new production technologies such as Ignite. Ignite reduces the number of humans in the overall production of a local newscast. This innovative technology is leading to the digital replacement of live on-air weathercasts by way of automation and computers. Comments from the weathercasters indicate that they are not yet willing or able to believe that they may be replaced by automation: a trend noted in the changing television news business environment.

Weathercaster Routines, Rituals, and Culture

The concept of culture as noted by Geertz (1973) who built his views of culture from the work of Parsons (1951) and Weber (1909), is seen as a "system of symbols by

which man confers significance upon his own experience" (Geertz, p. 251). This symbolic web of significance can be manifested in routines and rituals (Ehrlich, 1996). The routines and rituals that help describe the weather culture are evident in observations and in the comments made during interviews with weathercasters. This section of the dissertation will primarily examine key comments given by the participants, many who have played hyphenated (newscaster/weathercaster) roles, along with participant and non-participant observations done over a six month period of time. Examples of the symbols manifested in the routines and rituals of weathercasters will be presented first. Following this will be a findings section on the perceived cultural differences between news and weather. Finally, a section on the self-identified characteristics of weathercasters will be done by displaying the top five characteristics of successful weathercasters and the responses to questions about what the weathercaster wants to be remembered for doing in their career. Prior to showing these findings, a brief review of the research questions relevant to this section will first be done.

Research Questions Concerning Culture

> **Research question 3.** What are the routines and rituals practiced by weathercasters found before, during, and after the Monsoon?

> **Research question 4.** What perceived differences do weathercasters have when examining weathercaster culture in relation to newsroom culture?

Routines and Rituals

Research question three focuses on the routines and rituals practiced by weathercasters. The present study of routines and rituals is based off the previous scholarly research of Geertz (1973) and Tuchman (1972) who noted that routines are associated more with organizational issues while rituals are more individualistic. Certainly, the practice of getting ready for and performing live weathercasts on-air involves regular work routines but there are more symbolic rituals that happen as well both before and during the newscast. Examples of routines and rituals manifested by the weathercasters that help them strategically prepare for on-air stress and life in the "limelight" of broadcast television news will now be discussed. The findings about weathercaster work routines will take place first followed by specific examples of weathercaster rituals.

Weathercaster Routines

Interviews and observations noted that basic routines of weathercasters can be seen during both normal weather conditions and in severe weather conditions. Weathercasters noted that normal work day routines include analyzing forecast data, preparing graphics, and interacting with producers along with performing on-air and web based content. Basic work routines are altered by severe weather as larger amounts of data and information come into the weather center. Severe weather changes the routine as weathercasters noted that they monitor the radar at home or when they are not working (referred to as "baby sitting" the radar by weathercaster Sandra). During active, potentially severe weather days the weathercasters noted that they usually get to the

television station earlier to be better prepared. The altering of the basic routine was found in the weathercaster excerpts obtained during the Monsoon. Specific examples of how the routine is altered in four areas are now presented: (a) communication flow increases, (b) war cries and crying wolf escalate, (c) frenetic pace intensifies, and (d) changes in eating, drinking and speaking.

Communication flow increases. Field notes and observations, along with formal and informal interviews, taken during the active 2014 Monsoon showed an energized communication routine before and during severe weather situations. Typically there are specific watches and warnings issued by the National Weather Service that give some preview or lead time as to inclement weather. Often even before these alerts start and especially after they happen there can be a dramatic increase in newsroom personnel approaching the weather center along with increased communication between news and weather. One younger weathercaster commented on communication during the Monsoon.

> Communication goes up when it comes to severe weather… between everyone. And then you are obviously trying to figure out where the chopper is going, so I think communication is amazing and it exchanges between everyone in the newsroom (Weathercaster Floyd).

During a severe weather day the weather center is bombarded. There are numerous phone calls and e-mails made by newscast producers, reporters, assignment desk personnel and managers – typically the news director, assistant news director and executive producer. These personnel frequently approach the weather center making it difficult to focus on tasks at hand as they ask questions. Some of the questions observed where: Where is the storm going to hit? When will it hit? Which reporters should go out

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and where should they go?   Should we launch the helicopter? How bad is this going to

be? The stress of these questions and the continual visits and the "milling around" of

non-weathercasters at the weather center are part of a routine that occurs specifically on

severe weather days.   Such a routine was regularly observed during the severe weather of

the Monsoon. One young (20-29 year old) weathercaster with limited severe weather

experience noted this about being at the focal point of information flow during severe

weather:

> Those are definitely busy days for me. I think those are the most exciting days
> because you're constantly doing; you know, I love to gather information, I love to
> be so… in the state of flow, to borrow the term from a psychologist, so that you're
> in flow - is just go, go, going and really enjoy what you're doing (Weathercaster
> Jane).

The constant flow of communication is part of the excitement of severe weather and the

rapid changes that occur during such events.

> Yeah. I'm kind of a fly by the seat of my pants kind of a person when it comes to
> this job. I'm just like: "Go! Go! Go! Go! Go!" (Weathercaster Shelley).

This experienced, older weathercaster notes how her behavior of "Go, Go, Go" is

energized by the changing environment.   During severe weather days, weathercasters

communicate more to others in the newsroom as is exhibited in war cries.

War cries and crying wolf escalate. Additionally, the weathercaster may be the

one sounding the "war cry" by giving advanced information on a potentially bad weather

day. Weathercasters were observed visiting other news personnel work desks to let them

know what may happen in the immediate future or later on. As storms increase and

become more active in the area the flow of communication increases, damage reports

come into the news desk and photographers are dispatched to various areas of breaking

news. The overall energy and stress level increases in relation to the severity of the

weather related event. A veteran weathercaster and news anchor had a unique

perspective that was critical of the added energy or over exertion that gets put into severe

weather coverage during the Monsoon. This perspective from the news anchor side

supports the idea that over selling and hyping up the weather is part of the routine in the

market.

> As a news person, I've come to dread it [severe weather] because this market has completely over blown weather coverage. Every single storm does not warrant 20 minutes of nonstop coverage. I mean, when the storms are breaking in the metropolitan area absolutely you go with it. You go hard and you go to as many people as possible. But when they are not happening, when I see stations in the market doing 20 minutes of, "Well, monsoon could kick up this afternoon," or, "The monsoon could happen tonight," I just think that is just the basic "boy who cried wolf" and it just reduces our credibility. I think it reduces all of our credibility. I mean, when you get the general public saying, "Hey, did you go live from a rain puddle tonight?" You know that people have reached a saturation point but the problem is the people that consume our product do not turn it off during weather. The general managers and the news director see our numbers go through the roof any time weather happens whether it's big or small so every storm is treated the same. I just don't buy that philosophy. And yet you look up at the competition and you see the competition going for sometimes thirty, forty minutes on the tiny storm and it just makes everybody follow like sheep. I do not like that (Weathercaster Carlos).

The issue of trust and credibility noted above and the thought that weathercasters

are hyping up the weather story or "crying wolf" is also reflected in the comment of this

veteran chief meteorologist who makes an interesting observation about the tone of the

weathercaster. The tone is reflected in the way the weathercaster acts.

> Yeah, it's weather… so it's a constant battle and it's a constant gauge of how much the newsroom trusts you because you don't want to "cry wolf" but you also don't want to overly calm them down because then the next time something significant happens they go "well you know she wasn't taking it seriously" and it really was a big deal. So it's a constant battle to kind of gauge the tone of the day and as the meteorologist you're setting the tone for everybody else in the newsroom because the second anything goes down weather-wise they're looking

at you going okay "is she hyper and excited about this?" you know "is she worried?" or you know what's happening. So then you, constantly just have to make sure that your responding appropriately because they are going to respond based on your response (Weathercaster Shelly).

The weathercasters have to monitor their individual behaviors, actions, and attitudes to either motivate the newsroom personnel to do something or to keep them from worrying too much about the severe weather. Understanding the fine line between over-reacting and downplaying was seen by Shelley as a way to develop trust rather than lose it as is the case when the weathercaster is constantly "crying wolf" and no bad weather appears.

Frenetic pace intensifies. Even when there is no threat of severe weather there can be a frenetic pace as part of the routine. For example, the early morning newscast, sometimes beginning at 4 a.m., affords many weathercasters few precious minutes of preparation time as they push the deadline to get the graphics and forecast ready. Field notes, observations and interviews confirmed that this is a stressful time. One routine that many in the morning subscribe to is what appears to be frenetic pace or energy. It is a constant moving and doing in order to get completely prepared in a somewhat chaotic matter, before the deadline. Here is what one weathercaster noted in terms of how she felt in the morning.

I feel like I'm always running in the mornings. I have to put on makeup; I have to fix my hair. I have to be out on the weather center by 4 am to put my make up on so I can run back in and do the stuff for the web and then I run back in 10 to 15 minutes before the newscast and start doing web weather and start putting my shoes on. It's always running (Weathercaster Julie).

Another item noted in ethnographic observations is that in the early a.m. routine there is typically a highly repetitive format to the news program. Most a.m. news shows try to run weather and traffic every 5-10 minutes as it is assumed that the audience will

be doing other things such as getting ready for work or getting the kids off to school and only has limited time to view or hear the news and mainly wants to know what to be prepared for prior to going out the door. The viewership is not seen as sitting down watching the entire two and a half hours of a.m. news. One news director was heard to say, "Morning television news is just radio with pictures." Morning weathercasters experience a very pressured and stressful pace given this unique and constantly demanding schedule of being on the air every few minutes for over 5 hours straight or even longer depending on breaking weather or other events. The frenetic pace gets altered during severe weather mode as additional weathercast coverage and time on-air increases. Trying to cope with this pace by putting nervous energy into action is a strategic coping mechanism manifested in the basic functional routines of many weathercasters.

Changes in eating, drinking, and speaking. Morning weather people are not the only ones who tap in to this type of nervous energy in order get prepared and psyched up for the newscast. Here is the comment of one veteran meteorologist who spent many years on the morning shift and now uses those habits in the evening.

> The only thing that I do is I'll sit back here and eat, feed my face in between shows, to keep my blood sugar up so I can sustain that amount of adrenaline and energy. But other than that, it's nothing. There's no ritual, routines or anything. I'm just trucking along (Weathercaster Shelley).

The above weathercaster notes that there is no ritual or routine involved; nevertheless, the routine pattern of eating food at certain times and for specific reasons (i.e. to maintain a high energy weathercast presentation) can be seen as a daily routine aspect of the job. This was observed in other weathercasters as well. The use of food and drink as on-air

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energy drivers and the routines associated with food and drink, especially stimulants such as coffee or caffeinated drinks are supported by the organizational environment. Regular food and beverage drop-offs from sponsors and companies looking for some on-air publicity were part of the routine. Food and beverage products provided to the newsroom were observed to come from Dunkin Donuts, Chick-Fill-A, Cheesecake Factory, Pizza Hut, Mexican food restaurants and local candy shops. Occasionally news or weather live shots yield a return of food for the crew in the newsroom. Additionally, coffee makers and vending machines located at the station also support the consumption routine. During severe weather the length of time for the weathercaster at the station is increased as they have to be ready to go on-air for breaking weather cut-ins. Weathercasters were observed to be eating and consuming food at their working area and not taking outside the station breaks during severe weather.

Other weathercasters have interesting preparation routines such as speaking out loud and practicing their lines, almost like actors do before going on stage. Here's an example:

> I would say the biggest thing I do is talk out loud. I always read out loud, I would say my weathercast out loud. I started that from day one and that always helped calm me and its always helped get me prepared for the segment (Weathercaster Carlos).

Using one's own speaking voice and practicing out loud can help prepare and calm the weathercaster. It acts as a reflective feedback mechanism bringing positive mental feedback and prepares the talent for the "performative elements of news presentation" (Atkins, 2011, p. 108). This routine is not unique to individual weathercasters. News anchors and reporters employ similar out loud speaking routines

prior to on-air performances as well. Weathercasters were observed to be speaking out loud more during severe weather as they would read over recently issued watches and warnings from the NWS, rainfall totals from the local flood control district, and damage reports.

In summary, there were four weathercaster routines reported and observed; they appear to get altered during the Monsoon. The routines involved greater interaction with the newsroom by increased communication flows, war cries about possible severe weather that may be misconstrued as false (similar to the boy crying wolf), frenetic pace increasing with stress, and coping with performance issues by way of food, drink, and speaking out loud. These routines are connected to the organizational aspects of weathercaster work. Specific weathercaster rituals that relate more directly to the individual will now be presented.

Weathercaster Rituals

Each weathercaster has unique attributes, talents and most relevant to this study, insights, opinions, and comments about what they do. The findings presented come from exemplary individual comments, personal weathercaster insights, observations, and short stories. These are organized into five rituals and are presented and supported in this order. The first three findings on rituals - the symbolic warrior, the ring, and the ear piece - will be examined by way of individual weathercaster stories and comments. Next, the fourth finding - primping and mirror talk - is supported by participant observations. The fifth and final finding - monitoring the opposition - is supported by individual

weathercaster comments. This section of the ritual findings will start with a story about

the vesture of the weathercaster.

The symbolic warrior. A veteran weathercaster who has worked in multiple

markets in the Southwest has a very unique story about what he does to get ready for

each day of work.

> Yeah. I have to do this the night before. I have a valet, which is sort of that thing
> you put your suit on the night before in a holding case called a valet. I put all my
> stuff – tie, suit, shirt in it. I do like a little meditation because I used to play
> football and I didn't go that far. I played in high school but I always pretended that
> I was going to be an NFL player.
>
> So now that I'm not doing that, this is my armor, it's my suit of armor. I get it
> ready and I choose which armor I'm going to wear the night before. I put that
> down in the valet and I pick the tie out as well. Which kind of tie? Which day? If
> it's Monday, it's a red tie because I really have to get people woken up and then a
> few things there. By the end of the week, I'm in this really cool blue ties that I had
> out there. This little cobalt blue that's -- what shoes am I going to wear? I get my
> socks ready to go, the belt that I'm going to have.
>
> Because I do a morning show, I have to wake up the middle of the night. So when
> I wake up, it's all sitting there and it's almost talking to me and saying, "Hey, get
> up. It's time to get ready. This is your armor. Put this stuff on." It's really just
> motivating when I do that. It was kind of a ritual now for almost 20 years.
> (Weathercaster Eddie).

This ritual of preparing attire is unique to one individual observed in this research

study and no other weathercaster mentioned this type of ritual. The ritual taps into the

spiritual and psychological dimensions of the performer as he noted that he does "a little

meditation" prior to carrying out this action. This ritual was an aid to the weathercaster

in his occupation as it supported or motivated the individual given the rigor of the early

a.m. work.

Physical symbolic object - the ring. Another way for weathercasters to get

themselves positively prepared is to draw upon spiritual or physical objects as noted

below:

> My wedding ring is my grandfather's ring, too. And this is a good luck charm and
> there was one day, I forgot it…that was hard. Typically I'll point to the man
> upstairs and I'll spin my ring on my ring finger just to ask for guidance. My
> grandfather watches down on me or whatever. And one day, I went on the air and
> I lost my ring at home, oh my gosh I was so lost. I feel very strange without it
> (Weathercaster Bob).

The connection to a deceased ancestor and to deity is personal. This personal

information adds support and content to the types of individual rituals performed. Such

weathercaster rituals were not observed on camera or in the open workplace. This

finding was unique as spiritual rituals are hard to detect in this working environment and

other weathercasters did not divulge such information. Bob used his ring while others

noted different physical items that brought them comfort as well even though they were

not necessarily religious in nature. One such object will now be explored.

Physical functional object - the ear piece. A functional part of the job for

weathercasters involves putting on the communications equipment. Specifically, donning

the IFB (interruptible feedback or small ear piece) is a ritualistic way of getting focused

on the task at hand. It was observed that weathercasters should typically have the IFB in

and working about ten minutes prior to the newscast as pointed out by this female

weathercaster, "yeah, ten minutes before you make sure you have your IFB, mic check

and then of course I do my hair in between all that. I've got to fix my hair."

(Weathercaster Jane). Interestingly, the IFB is more than the routine donning of a

functional device; it is a comforter, a security blanket for the weathercaster as reflected in this excerpt:

> What makes me feel like okay, I can go on the air and I think the one thing that I do pretty early on is put my IFB on, and I always check before I leave the house, I have an IFB, I always check the station that I have my IFB and it's like the first thing that goes on when I get at the station because I feel like I am not complete without it because if you don't have that, it's total panic before the show. So I feel like nothing can go too wrong if I have my IFB. So maybe that would be the main part of my craft. I got to have that (Weathercaster Vicki).

The IFB is an individually intimate object in three ways. First it is physically touching a sensitive part of the body, the ear. Second it transmits personal information from someone (usually the news producer or director) to the individual weathercaster. Finally, it is unique in that IFB can be custom molded and made to fit each weathercaster's ear shape. This intimate connection between the ear piece and the weathercaster helps it transcend the realm of a mere object of use.

Vicki notes that she feels "like nothing can go too wrong" if she has her IFB in as the IFB is a physical object that the weathercaster uses to gain a sense of control. Ironically, the weathercaster can control the volume on the IFB box but the reality is...the information on the IFB typically controls them. Time cues from the director or producer are given into the earpiece along with relevant facts or feedback from reporters and anchors. This gives the weathercaster vital information which can make the weathercaster look and sound good on-air. Conversely, if the IFB is not working or the information is not coming in correctly it can make them appear silly or even foolish on-air. This was especially relevant during live shots or remote broadcasts when the weathercasters and reporters do not have direct in studio contact with the news anchors. If the IFB was not working correctly it made the timing look, feel, and appear way off.

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Observations of the weathercasters' IFB use indicated that when the IFB was functioning properly it was not only able to transfer audio information but it also conveyed a sense of comfort, control, and confidence to the weathercaster.

Primping and mirror talk. While grooming hair and applying make-up are daily actions they are symbolic in the weathercaster work role and can be seen as ritualistic in nature. Females are accustomed to putting on make-up, but male weathercasters also use various types of make-up (face powder, eye brow pencil, etc.) to prepare for on-air rating battles with the other stations' personnel. Competition for ratings and market share is tough and the on-air look of all news people, including weathercasters, makes physical appearance an important factor. The stations observed in this market have specific rooms or areas for the on-air personnel to put on their make-up and typically have many large mirrors and bright lights. This necessary yet narcissistic process of preparation for the broadcast happens at a set time, usually just prior to the start of the newscast.

Observations showed news and sports anchors along weathercasters and reporters vying for an open spot at the mirrors prior to meeting at the news desk. Discussions about family, friends, and work situations along with a variety of other lively and light-hearted topics were engaged in by the news, sports and weather people as well as with reporters who were doing the standup portion of their story in the studio. These communication interactions were not simply team building or bonding experiences but also a way to get "psyched up" for the local news war. Mirror talk can be a pep talk filled with positive affirmations (e.g. "You look great in that!" or "Am I ready? I'm always ready! In fact, I was born ready!"). The positive and even aggressive banter is part of the ritual performed by the on-air personnel who are getting ready for the live

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news battlefield. The make-up application process helps initiate, support, and sustain this daily ritual.

Monitoring the opposition. Ehrlich (1996) discussed newsroom rituals such as "monitoring the opposition" or watching the other television stations to see what they are doing. Weathercasters were each asked specifically if they do this in their schedule while working or getting ready and were asked to explain any other ways that they monitor the opposition. Twenty-seven excerpts were coded from the weathercaster interviews having a relevance to this practice or routine. While the majority of the weathercasters who were interviewed (9 out of 16) did practice some form of monitoring the opposition, the other weathercasters (7 out of 16) said they paid little or no attention to the competition. A weathercaster with an advanced graduate degree noted,

> I don't really care what everyone else is doing, I am sure they are doing the exact same thing we are going to do. So, I don't really look at that, so I am probably talking from another point of view, I am not media trained, so if another television station is featuring something I don't necessarily care. I am here to give you weather information and I don't care what they are doing at Channel [X] (Weathercaster Floyd).

Interestingly, weathercaster Floyd pointed out that he was "not media trained" or was not trained as a journalist. Sara, a younger weathercaster who only does weather (no reporting) also noted that she does not monitor the opposition but added the idea that she is in a bubble.

> I don't monitor the opposition. I'm in a bubble […] so I don't really watch weather meteorologists or the other ones coverage when I'm on shift. I watch when I'm off shift but not when I'm on shift (Weathercaster Sara).

Yet Sara is a younger (20-29 years old) weathercaster who uses social media to monitor the competition.

I always automatically look at my Twitter feed and see what all the meteorologists are talking about for the past few hours or for the afternoon. I have all the meteorologists and weather entities, the people I follow, in a specific list, and I look at everything that they've been talking about for the past few hours. That's when I have time to kill, business or anything happening, that's what I always look at first (Weathercaster Sara).

Monitoring the opposition and the Weather Channel was a way to stay informed on breaking or severe weather. Today weathercasters use Twitter to stay in constant contact with the flow of information.

Every time a severe weather watch or warning is issued, they [National Weather Service] tweet automatically through that and so I'll see those. If I'm not by computer like if I'm walking from one part of the newsroom all the way into the studio or I'm in the bathroom doing my hair and makeup I'll look at that Twitter feed to see what's happened in the past five minutes, ten minutes (Weathercaster Sara).

While the majority of the weathercasters interviewed do watch other competitors' on-air weather products, one veteran weathercaster with over fifteen years of experience noted that watching others became less of a focal point as he got further along in his career.

Yeah, I used to watch it when I was younger and I was getting in the business, I would watch religiously everybody else's presentation. I'd loved to just see different graphics and just how they told the story of the weather for the day because everybody has a different way of delivering that. And I think when you're younger and you're new in the business and you're watching that is probably one of the most valuable tools ever with describing things (Weathercaster Bob).

This trend to watch or monitor the competition less as one gets further in his or her career is also pointed out by a senior veteran weathercaster who expressed a lack of interest in watching other local competitor weather products.

Yeah, I don't watch the weather channel, I don't watch weather, I don't watch competition. I try to get as far away from that as possible. So no, I didn't and I don't (Weathercaster Jeff).

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The same weathercaster later noted that he and his wife do watch other weathercasters but in other television markets. "When I'm out of town, I will watch the weather […] and I'll say, Oh we are much better" (Weathercaster Jeff).

A reflective comment that embodies the way that weathercasters feel about monitoring the competition is noted below by Alice. She explores her thoughts and also feels like she is in a bubble when asked about watching competitors' weathercasts.

> I don't. I mean I don't know? Maybe I should, but I don't. I just… I have a lot of computers. My PC… and I have a monitor that has our station and then I have the Weather Channel up and then the other ones [local stations]. But the two or three other ones [monitors]… typically production uses those. Sometimes they'll be watching like 4 channels. Some do the actually watching… but they'll have it on something with 4 channels in it. Sometimes forecasters can take a peek at what the current score is with the game or something like that. And then also, when I'm on, pretty much all the other stations are on too. If they're on, I'm on. So I can't really watch. I don't know. I just use our show on it. That way I can know what's going on. But I do know that the news does do that because they'll even say, "Oh, this channel is live with this, or kind of live with that," and make a comparison. Sometimes it's about that. But no, I don't know, I feel like… really like… I'm kind of in a bubble or something like that (Weathercaster Alice).

Alice also points out the difference between the way news personnel monitor other competitive news stations in the market and the way the weathercaster does, or more importantly does not do it. Findings regarding monitoring the competition show forty-four percent (7 out of 16) of the weathercasters do not engage in direct monitoring or observation of the local competition. It was also observed that the majority of the veteran weathercasters had little knowledge of the younger weathercasters in the market by way of name or station affiliation. Senior level weathercasters (those with over 15 years of experience) in the market gave responses indicating that they payed less attention to other local station weathercasts.

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In summary, the findings concerning research question three about the routines and rituals of weathercasters noted the altering of routines during severe weather and the rituals manifested. Specifically noted in the routines area were increased communication flows, war cries and crying wolf escalations, frenetic pace increases, and changes in eating, drinking and speaking. The rituals findings reported five specifics concerning vesture: a ring, the ear piece, mirror talk, and monitoring the opposition. Findings relating to the emergent themes used to define weathercaster culture in the prescribed local television market - Phoenix, AZ - will now be displayed.

Weathercaster Culture

Research question four of this dissertation is focused on the perceived differences found in weathercaster culture in relation to newsroom culture. Newsroom culture examines social control (Bantz et al., 1980; Breed, 1955) and "is a product of tension between autonomy and conformity" (Lewis, 2009, p. 998). The tensions studied here are between weathercasters and newsroom personnel. Weathercasters align with autonomy and newsroom personnel (especially management) are aligned with conformity. Some weathercasters work on both the news and weather side and are able to see the autonomy verses conformity tension in a different light. Prior to presenting the findings that explore this tension, information about the hyphenated roles that some weathercasters play will first be noted. This will be followed by a description of the organization of the culture finding excerpts. There are three dominant themes - dichotomous relations, autonomous functions, and identity perceptions. Finally, specific examples of each of the

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excerpts relevant to the three dominant themes and the cultural differences will be displayed.

Hyphenated roles. Six out of the seventeen weathercasters interviewed have experience in roles of both news anchor and weathercaster and have worked as reporters as well. These individuals who previously or currently work in "hyphenated" roles (newscaster/weathercaster) help shed considerable light on the similarities and differences between news people and weather people. While comments from the "hyphenated" perspective are very informative they are not the only participants whose comments were used to answer the research question concerning cultural differences. All of the participants were interviewed about culture which yielded a variety of insightful and unique comments and are organized as follows.

Organization of the culture excerpts. The comments come from a direct response to questions or discussion with the respondent about culture or they used culture in their response. Emergent in the 86 excerpts are three dominant themes noted below.

- Dichotomous relationships

- Autonomous functions

- Identity perceptions

Explanation and definition of these three themes will now occur followed by specific examples of the findings.

Dichotomous relationships. Cultural anthropologist Catherine Lutz (1987) referred to dichotomous relationships as part of the context and defined them as relationships between categories, such as between emotion and thought, as was the case with the tribal islanders studied by Lutz who live on Ifaluk Island, a small coral atoll in

the Pacific Ocean nation of Micronesia. Dichotomous relationships are defined in this study of weathercasters by the context examined – the weathercaster relationships with the news room personnel. The dichotomy stems from the branching of news into weather, meaning that television newsrooms studied in this project place weather in a subordinate role to news. It is analogous to news being the trunk of the tree and weather being a branch of the tree. An example of this occurs when the news producer tells the weathercaster to make his or her forecast only 90 seconds not three minutes just a few minutes before the broadcast. When this happens there may be breaking news or other stories of greater importance so the weathercaster works with the news team to create a sense of cohesion and an appropriately timed on-air product. While the dichotomy or separateness exists, there is also the cohesiveness of the team (news, weather and sports) which varies in each news station and market. The fluctuation between separateness and cohesion was perceived by all the weathercasters in this study who noted that news and weather are each individual, unique entities. Support for this dichotomous division occurs while exploring the findings after explaining the autonomous functions and identity perception categories.

  Autonomous functions. Autonomy relates to the use, or lack of use, of support system functions (such as writers, editors, producers, etc.). Weathercasters are highly autonomous in their jobs and daily responsibilities. For example, a weathercaster rarely writes out a news script for the weather presentation. They do not read a script off the teleprompter like a news anchor or reporter and therefore do not need someone to write their script or run the teleprompter. This differentiates the weathercaster from the newscaster. While typical daily duties are obviously unique, there are insights and

comments given by the weathercasters that help elucidate the unique aspects of weathercasters in their support role and in the support they get from others in the news production process.

   Identity perceptions. Identity perceptions are constructed around what the weathercasters think the newsroom people (mainly producers and reporters…but also assignment editors, photographers, and managers) define them, the weathercasters, to be. For example, a weathercaster may perceive that the producer thinks of the weathercaster as a "nerd" or quantitative scientist type. The identity perceived by the weathercaster is further broken down in the findings area into types of weathercaster (i.e. the friend, the expert meteorologist, the branded personality, the congenial scientist, the jargon reducer).

   Additional explication and support of the three main categories (dichotomous relationships, autonomous functions, and identity perceptions) will now be shown in the following findings.   The key excerpts derived from the interviews are noted below and explain perceptions of weather people in relation to newsroom people.

Dichotomous Relationship Examples

   This area is divided into four parts containing examples of dichotomous relationships. It will focus first on the drama and over-hype of news, then on factors of proximity, time control, and egocentricity. These will be examined and supported with specific examples from the excerpts and observations.

   Drama and over-hype. The weathercasters interviewed who brought forth unique observations on the differences between newsroom people and weather people are now reviewed. Specific differences noted by the weathercasters highlighted the contrast

by discussing the function of news during a severe weather event. A veteran weathercaster with experience in both news and weather sees a marked difference between the two cultures.

> …we're totally different. I mean news is all about what they want to see… the most dramatic images. They want to take the most dramatic image or experiences, video, video, video. And I think weather people, at least in our department, we're just more about the facts like we're not going to totally overhype one small storm that moved to one part of the area and go crazy with that…as...news would. I mean they would lead the show. It would be team coverage on one storm (Weathercaster Alice).

Observational findings support this perceived division concerning the "over hype" of weather content by news. Participant observations by the researcher in newsroom meetings and noted in informal discussions with the weather anchors found that weathercasters are encouraged by management and newsroom personnel to bring the "exciting" or "active" weather to the top of the news agenda. Observations of newsroom correlation meetings were done during the six month data gathering period. Usually these meetings happen each weekday both in the morning and in the afternoon and the weathercaster normally checks in at this meeting for a brief weather update. If it is an active or severe weather day more time is usually spent in the meeting by the weathercaster unless the weathercaster is in the middle of severe weather broadcasts such as special weather report cut-ins. The meetings with producers, reporters, production people and management such as news directors and an occasional upper level manager such as a general manager or vice president, help prepare news personnel on the type of news coverage and the specific content coming up that day. A news director who had worked in several severe weather markets before was heard in a correlation meeting saying, "I do not want to know what the 'chance of rain' is but I want to know where it is

going to rain and when." This comment reinforces the idea that newsroom personnel do not understand meteorology. Experienced, well trained meteorologists know that forecasting exactly where, when, and how much it is going to rain can be a difficult if not impossible task during the Monsoon. Weather is not always as predictable as newsroom personnel would like it to be for planning purposes.

The newsroom meeting was observed to be an opportunity for weather people to showcase their expertise in forecasting as well as let the newsroom producers and managers (those who control the information flow) in on the possibility of weather being the biggest story of the day. During these meetings it was observed that when weather had not played a prominent role in the agenda for a while or there was little in the way of novel news, the news producers would get highly interested in weather. Weather gave the newsroom something "new" to push to the top of the agenda or rundown especially during slow news days and when there was an event that could become severe. The role of the weather anchor in these news meetings is to give as much advanced warning as they can by informing the newsroom of the possibility of severe weather. Yet weather people see severe weather differently from the way the newsroom personnel see it. Here is supporting insight from the perspective of a veteran weathercaster:

> I think we just kind of keep it to the real perspective. Is it really something that's impacting the entire city so if people were watching from all over town and it was just one storm that hit part of the town and we're making a huge deal about it… is that going to make sense to the viewer watching? You know what I mean? I think we, weather people, keep it more in perspective. Like, "Okay, what's really happening here? Is it like a severe, massive, city wide event or is this one storm impacting one area?" I just kind of focus in on that area until that particular area knows what's happening but not over dramatize it. Whereas the newsroom, that's not what they're thinking at all. They're thinking, "The sky is falling and we need to act accordingly." So I think we definitely have different cultures in that aspect (Weathercaster Alice).

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Not only do veteran weather anchors see this difference but a relative rookie in the industry also sees this type of contrast between news and weather. The contrast noted by this rookie was in a particular situation where the proximity or location of the weather center plays a role.

> … downstairs where we are [weather] it is totally laid back than up on the [Xth] floor. Totally laid back, it's like we don't necessarily stress out about that stuff, we're getting it done, it will be on air, it'll be fine, rather than upstairs where the friggin' news happens, you have the news people up there that go 'we need to be on air now and show up the storm' …so, it's kind of nice that we're downstairs because we have the graphics, we get the stuff done, and there is no stress or pressure because we know it's going to get done in a calm sort of pace (Weathercaster Floyd).

This rookie's comment also reflects the idea that news is competition and revenue is driven by ratings. A large part of the pressure by management is driven by the need to be first on the air with the "breaking news" on the latest storm. Having the weathercaster working area in a different location than the newsroom allows the weathercaster to be removed physically from the newsroom and can reduce this sense of pressure for the weathercaster.

Proximity and importance. Separation by way of physical distance is not a unique situation as weather technology (mainly computer systems) often dictates the separateness of weather centers from newsrooms. It was observed that television stations and news studios have the weather area, computers and other equipment, in different areas depending on the design of the newsroom and studio. For example, all of the stations studied in this project had weather equipment within 30 feet of the "on-air" set so weathercasters are able to interact with and manipulate the equipment. Four out of the five stations had a weather set on the main news set used exclusively for weather and the

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weathercaster could access weather computers on that set. Due to the technology and the need to stay very close to the weather computers, the weather people are many times not working in the same area as the newsroom. An important finding is the fact that weathercasters perceive a separation regardless of having their work space located in or out of the newsroom. This was evidenced by multiple weathercaster comments. For example, one weather anchor whose weather center is in the center of the newsroom had these examples of how weather is treated differently than news by reporters.

> Sometimes a big beef of mine is when reporters don't think of weather as breaking news. I'll say…there are storms developing right now, we need to get out to […] and then 15 minutes later they're still in the news room (Weathercaster Kenny).

Part of this lackadaisical attitude is attributed to a lack of trust between newsroom personnel and weathercasters. News photographers and reporters were recorded in participant observation field notes to have skeptical views and even critical views about the forecast. Certainly, in weather forecasts and in meteorology there are elements such as the nature of air mass thunderstorms that cause large amounts of variability. Many times the weather "news" story is what happens after the severe thunderstorm passes through the area. One reporter who was observed in a newsroom discussion noted, "What's the hurry to get out there when the real story is what happens after it passes." There are also other concerns for safety and health that the reporters and photographers have along with the idea that many reporters are trained journalists but are not trained to be storm chasers. This seasonal conversion of news reporters into storm chasers is a common event in active weather markets, but it can cause a division or dissension as the reporters are typically given their directives from the assignment desk rather than getting

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directives on where to go from an atypical immediate boss. Typically, the assignment

editor gives the reporters the specific directions on their story and tells them where to go.

During a severe weather event this "weather person" who may not know precisely where

the storm may hit is in charge. Kenny, a chief meteorologist, noted that "weather doesn't

act like a news conference. It's not at 3:00 p.m. at this location" (Weathercaster Kenny).

The frustration created by ambiguity and the variability of weather along with this

situational leadership role change (reporters being told what to do from the weathercaster

rather than from the assignment desk) creates an autonomy versus conformity tension as

described in the following comment from a veteran chief meteorologist who has worked

in multiple large severe weather television markets. Here is an example of the interaction

between weathercaster and photographer/reporter along with an application of online

tools and technology:

> …and 'why aren't you out the door? Well, we had a couple of other things to do
> first then we're going to get out there.' Then he has to load up the gear and there's
> no sense of urgency when covering weather. I always tell them the weather
> doesn't happen in the building. You need to at least get out there and start
> moving. I also encourage them to be an active participant when covering weather,
> such as looking at the interactive radar on the phone, which everybody has now.
> There's no excuse 'I don't have any data. I don't have any way to look and see
> what you're seeing.' The online tools and the mobile device tools that we have
> available to us now, so that anybody out in the field can also see nearly virtually
> what I can see. There is that problem of trying to get them to realize the weather is
> an important component to the newscast. It's said time and time again that
> weather is the number one reason people watch local news because it is all local
> and it's the one aspect of the newscast that does affect every single viewer every
> single day (Weathercaster Kenny).

Kenny not only points out the differences in weather and newsroom personnel, specifically video photographers, but he also touts the importance of weather as the number one reason people watch local news.

Time control. The importance of weather and its role in the newscast ties in to coverage and the chasing of storms as well as in to how much time is allocated for weather. Producers adjust and change when severe or active weather is going to be in the newscast, especially when there is "breaking" weather news. The changes of active or severe weather happen in very short time spans (often only minutes) causing rapid changes in how much time weathercasters are allotted in the newscast. Determining which person should be in control of this time can be problematic depending on the producer/weathercaster relationship and technology as was noted in this comment from a weathercaster who feels that the "time control boss" should be the weathercaster:

> When they start cutting weather back, I'll let them know that it's a bad idea or a good idea or when there's active weather going on we should stay a little bit more with it and try to cover as much as we can. Occasionally the equipment, our automation system makes it a little more difficult to change things on the fly and some producers and some technical directors are a little more adept to change things on the fly. Some are a little more set in their ways. 'This is the way it is, it's locked in and I can't change it now.' You really have to be adaptable, I think, to cover a changing weather situation. Like breaking news and at that point, sometimes you have to throw the run down out the window and go with whatever's happening. It's really going to be local television news, the strong point, in years to come. Covering a live event as it's actually happening and that is weather (Weathercaster Kenny).

This comment also shows the bias that weathercasters have toward covering weather. The weathercasters see the time spent on weather to be of great importance to the news. The amount of time allotted for each weather segment is viewed by the weathercasters as a valuable commodity that should not be taken over at the whims of producers. The

findings point out that the time allotted for weather, especially when severe, should be
tantamount to that allotted for a breaking news story…like a car chase, as noted below:

> Producers will often see that time as very flexible. You're in the run down for two
> minutes but I know that if things crash and we need to make up that extra time we
> can always give you three and you can fill it. Although if everything else is going
> over, we can always cut you down to one minute and I can save an extra minute
> there. For them it doesn't appear to be set in stone. I think producers, and some
> reporters, don't look at weather as a breaking news situation. If there was a car
> chase for example, they wouldn't hesitate to put it out for four minutes at a time
> and just look at the pictures of a car chase, but if there was active weather
> happening, I don't think they would look at it the same way (Weathercaster
> Kenny).

Egocentric. The idea that weather is the primary reason that people watch local
television news was also reflected in an interview with a younger female weathercaster
who stated, "I'm the reason people watch, no just kidding… I know…but I think it's still
the case; it's [weather] the number one driver…it really is" (Weathercaster Sandra).
Egocentric aspects of the weathercaster are embedded in Sandra's comment and it is also
reflective of the perceptions that weathercasters have if they are not more involved in
newsroom production or news content. Yet even those who have had both news anchor
and weather anchor positions see a contrast.

> "Now that I could see the news side… of the way they think of weather…it's
> almost like… they're [news people] scared of weather." (Weathercaster Bob).

The weathercaster words will now indicate that the dichotomous difference between
news and weather is even more pronounced when looking at autonomy.

Autonomous Function Examples

Specific examples that reinforce the idea of autonomy will now be presented with example excerpts for each. First, the lone wolf idea will be explicated and supported with excerpts and then the idea of total control will be presented followed by observations on the unscripted aspects of the job. These three areas compose this autonomy section.

Lone wolf. The role that weather people play in the television news environment is perceived by the weathercasters to be different because the weathercaster does not tie into the newsroom support systems. While they are part of a team they are also very much an individual production in terms of their on-air product. A converted reporter to weathercaster who also works regularly on both the news and weather desks noted this about how the support system functions differently in weather.

> The biggest observation, the biggest difference that I see is in the weathercaster…it is more of a row your own boat, lone wolf scenario if you will. Unless there is a team of people that you work with, whether its producers or other meteorologists, in the format of traditional shows you're really on your own to be researching, prepping, doing your forecasting, prepping your graphics, getting them ready for the show. Whereas if you are a part of a news team you are obviously in constant contact with many people from the start of the day where you are formulating your stories, to checking with the producers in the field, to even talking to potentially other reporters, if your story is somewhat connected to – if it's a multipart story people are covering different pieces. That's probably the biggest difference that I noticed is that it's a little bit more of an isolated job. (Weathercaster Jane)

A veteran weathercaster at multiple stations with extensive experience on both the weather desk and the news anchor desk points out a type of culture shock that occurs when going from the lone wolf position. Insights are also made into the supervisory role

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played by the chief meteorologist over the weather team versus the entire newsroom.

This excerpt also notes that it is an interconnected group during severe weather.

> So that's why when you're a meteorologist, you're the head of an entire department that has very, very little oversight by the entire newsroom. Is it a group effort during severe weather? Absolutely! But the day to day operation and the content that you put on, you're it. You're the producer, the editor, the writer, everything. You're completely in charge. So that was the biggest culture shock for me that I am no longer in charge. I'm an important cog in a much bigger machine (Weathercaster Carlos).

Additionally, this veteran anchor who has moved from weather to news and from news to weather positions explicitly notes the way these support functions are different for weather people:

> We're kind of our own unique little sub set, our own little culture because we're completely in charge of our segment. We go to the producers and say, "Hey, I want this video and I want this photo." But those producers don't tell us, "I want this map, I want this map, I want this map and I want it in this order." All of a sudden I'm an anchor and I don't have the ability to say, "I want to do this story, this story, and I want this story here, here, here, and here." I mean, think about it, we're our own producers, we're our own anchors, we're our own editors, we're our own writers. And then all of a sudden you go into a culture that you're only one of those five jobs. That's a culture shock. (Weathercaster Carlos).

The observations of Carlos highlight functional differences but more importantly they poignantly infer the psychological feeling that occurs when moving from the weather desk to the news desk – "a culture shock."

Total control. The isolated nature of the job is both a positive and negative because it allows weathercasters a lot of autonomy or freedom to create their own story without significant oversight from producers and management but at the same time this freedom or lack of control can create a disconnect from the newsroom personnel as the weathercaster does not have to rely on others. One senior veteran weathercaster and

newscaster who has worked on both local and national television networks stated the

support system uniqueness this way…

> you are in total control of your weather segment. The only thing you're not in
> control of is how much time the producer is giving you. What you do with the
> time that you're given, you have total control. When I'm out as a news anchor
> I'm relying on everyone else (Weathercaster Carlos).

Having worked on both weather and news desks for decades gives this weathercaster a

keen insight into these functional differences and the associated stresses.

> The thing I like about preparing for a weathercast, I know that I prepared it. I
> prepared the graphics, I prepared my information, I prepared the forecast so the
> responsibility all lies on my shoulders. When I go into a newscast I have to count
> on a team of professionals all doing their job. The writer has got the correct facts
> down to the reporter on the street to the assignment desk. I have trust in their
> gathering of the facts that what I'm saying is correct and a lot of times I put a lot
> of faith in other people. Whereas in my weathercast I put faith in one person
> alone, which was me. I think that this job [news anchor] is much more stressful
> because there are so many things that are out of my control (Weathercaster
> Carlos).

> The control and autonomy factors change when there is breaking weather. During

severe weather situations there is less focus on the single person or one man band role

that the weathercaster plays. When severe weather happens, the system support

mechanisms (e.g. assignment desk editors, reporters, photographers, producers, directors,

etc.) facilitate greater interconnectedness with the weathercaster as is pointed out here in

discussing the role of the weathercaster and the news personnel:

> Similarly though, I think that they're [news personnel and weathercaster] both
> interconnected as a team, when there is breaking news or breaking weather…it is
> brought first to the show and all producers eyes and ears… and the director, are
> turned towards the weather in the same way that when there is a breaking news
> event they'd turned to whatever reporter is out there or headed toward that story
> (Weathercaster Jane).

Jane points out that the severe weather event brings control to the weathercaster as the producers and director "turn toward the weather" to take the lead or direction in the weather story but this control was observed to vary depending on the assertiveness and aggressiveness of the individual weathercaster.

Unscripted. Another functional difference in the way news is delivered verses the way weather is delivered involves the lack of a written script. The news anchor typically reads the teleprompter whereas the weather anchor ad-libs as was noted below:

> Obviously news largely, not largely, but often is scripted to some extent. Whereas weather at least, in most of the weather people I've seen… they deliver their weather forecast… it's all off the top (Weathercaster Jane).

In connection to this, chief meteorologist Nick who has worked in multiple large markets notes,

> everything we say…pretty much everything we say on the air is all off the top of our heads so it's all in the adlib situation […] and sometimes the words don't come out quite right and we'll occasionally have the English teacher that call us up and say, "That's not correct grammar, it should have been said that way and you should be ashamed of yourself." And the only thing we can say is, we're doing three or four hits a night or in the morning it's even more than that and sometimes we're trying to say something and it doesn't quite come out correctly and usually I will correct myself right there on the air because my mother was an English teacher and I have no excuse (Weathercaster Nick).

Due to the lack of a fully written script on a teleprompter strange phrases and mistakes can occur thrusting the weathercaster into a different light as was noted by this younger female weathercaster:

> Totally. It's like you're not scripted so sometimes what comes out of your mouth? And if you're not very good at centering and you go back and listen to some of the things you say, you're like, "Why did I say that?" (Weathercaster Sara).

The teleprompter is turned from a word delivery device or script with words for the news anchor or reporter, into a visual aid tool for weathercasters. It was observed that when the weather person presents, the teleprompter is switched to a video signal that shows the same view that the audience sees at home on their television with the maps or graphics behind the weather person at the chroma-key or green screen. Due to this lack of a written script the weathercaster must develop a different set of delivery skills as noted by this weathercaster who does both news anchoring and weathercasting at the chroma-key.

> And so you learn to adlib and to role with the punches. A lot more changes I think. In weather it's just not scripted. So you just get used to rolling with the punches, listening to people while you're talking. And I think all those skills, not depending on the prompter in order to talk, I think that really helps when it comes to anchoring, because you're automatically comfortable in your own skin and you don't need words on the prompter to yield the topic, you can start right out of the gate reporting, and anchoring can become a comfort level, and a crutch sometimes to look for the prompter (Weathercaster Vicki).

In summary, this section has related the limited support functions that the weathercaster utilizes in the newsroom and the way they typically operate in the daily production of news. While these roles change in the system of news production during severe weather, the weathercasters perceive that they are a unique cultural entity – primarily in control of their own content. Next, we will explore the findings on what weathercasters perceive others in the newsroom and in the community think about them.

Identity Perception Examples

This section will look at the perceptions that other people in the newsroom have about weathercasters from the weathercasters' point of view. The excerpts are noted in

connection to the roles that weathercasters play and stretch along a broad spectrum.

Certainly individual personality attributes and educational backgrounds (i.e. certified

meteorologist vs. non-meteorologically educated) are factors to consider when looking at

the viewpoints of weathercasters. It is overly simplistic to attach basic categorical names

or associate individuals with one main type of identity given the great diversity of

individual weathercasters. Yet, the perceptions are based on what the weathercasters

have stated and are represented by excerpts organized into a general autonomy versus

conformity structure. Hence, there are two parts to each perception; one part aligns with

the autonomous individual - the weathercaster - and the second part aligns with the

conforming organization - the newsroom.   The perceptions are presented in the

following order: (a) congenial person who gets taken advantage of (b) science expert who

needs to keep it simple (c) personality rather than a brand (d) meteorologist who fools

you (e) an outsider without jargon.   Examples will now be given about each of these

perceptions which help to delineate the cultural differences of news and weather culture.

Congenial person who gets taken advantage of. A senior veteran weathercaster

with nearly 40 years in the business notes that weather anchors are treated differently

than news anchors when they are in the public. Here is an excerpt from part of a story

told about what it is like to be the weather person when walking into restaurants with the

main news anchors from the station.

> My name would be called out in the restaurant or somewhere a lot quicker than
> somebody else's [the news anchors] because they relate to me as being one of
> their buddies. I'm not telling them all about death and destruction. I remember
> earlier how I told you I didn't like to do that on the weather, this was one of the
> reasons because people relate to you differently when you are not giving them
> that kind of information [death and destruction] (Weathercaster Jeff).

Jeff sees the weathercaster as a "buddie" to everyone; being congenial, approachable, and friendly. He reinforces the idea that the public perceive weathercasters as nice people. Weathercasters also see newsroom personnel has having the same perspective, except the people in the newsroom try to take advantage of the nice, accommodating weathercaster as noted below in this veteran chief meteorologist's perception.

> I think a lot of people in weather that I met over the years, they're really nice. They're very accommodating and I find myself… the producers say, "Oh, can I get another fifteen seconds from you?" During the commercial break, "can we buzz it down?" And we've already produced a two-minute show or one ninety-second show. They want to take fifteen more seconds and I'm like, "Okay." I don't want to make them mad so sometimes I find myself overly nice when I should just say, "No. I want my thirty seconds so I'm going to use it" (Weathercaster Alice).

The congenial weathercaster Alice confesses that she would like her thirty seconds back but does not want to "make them mad" so she allows her time in the newscast to be cut.

Science expert who needs to keep it simple. The weather people are also looked at as experts in many areas of science. For example, they are frequently asked to report not solely on meteorological events but also on astronomy related items such as meteor showers, lunar and solar eclipses, and strange lights in the sky. They also add knowledge and content to natural disasters such as tsunamis, earthquakes, and fires. Weathercasters were also observed to discuss aviation crashes on-air depending on their training and background. The educational training and scientific component of weather also combines with computer technology; weathercasters have needed to become weather computer specialists. Due to the type of advanced weather computer equipment needed to create and control the weather graphics, weathercasters are treated differently than the other "on-air" news people as pointed out here when asked about deferential treatment.

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I think there is a little bit. I think that weather is such a specialized portion of the newscast that sometimes news looks at it as – they [news people] don't understand some of what we do or how we do it. 'You work those computers back there' and the fact that they just can't have… if a reporter calls in sick they can have another reporter cover that shift and everything's good. If a weather person calls in sick they have to be able to find someone who has the specialized training on that equipment and hopefully has some knowledge, weather based knowledge to be able to present a credible forecast, to put a credible presentation on the air. It's a little more difficult to have that combination (Weathercaster Kenny).

Yet given this level of expertise, weathercasters are asked to keep it simple. In fact, the weather anchor above also noted that management wanted the weather to be dumbed down for the viewers and mentioned that the news director said, "I don't want to hear any science terms." In contrast, the weathercaster sees their role for existence "to provide that expertise that other people in the newsroom wouldn't be able to provide" (Weathercaster Kenny).

Personality rather than a brand. Weathercasters are highly aware of their need to exhibit a strong individual personality and see this as being more important than promoting an abstract name or weather brand (e.g. Accuweather Forecast, Desert Doppler Weather Forecast, Valley Pinpoint Forecast, etc.). A long time senior veteran weathercaster had this opinion about weather personalities in comparison to weather branded products.

…what it really comes down to is; what is the number one reason people would choose to watch the weather, one station versus another? I have always affirmed this and I still will as long as I'm in this business, it comes down to people and personalities. If you feel comfortable watching someone and you're going to invite them into your living room. If you for whatever reason doesn't like watching someone on TV, you're not going to watch them even though they might have the best brand (Weathercaster Jeff).

This weathercaster sees branding as secondary to personality. Some of the weathercasters interviewed noted that news consultants are known to push brands and promote content versus people because people (personalities) will come and go but the brand should stay in a market. "I think it [branding] is kind of old school … kind of more of a stereotype again. I think some of the most important things are just being able to have a personality on the air" (Weathercaster Jeff).

Weathercasters noted that the types of weather personalities can generally be divided into two polarities - the funny extroverted personality and the more reserved scientific meteorologist. The difficulty that weathercasters have is in which role to play. This can be based on how the station or weather product is branded as noted by this weathercaster:

> I do think there are different personalities, like generally, you get a slightly different personality, more scientific minded with weather people as opposed to what's on the news side. It's not quite scientific. […] I think, over time there's a slight merging between the two. Once in a while you cross over, which I think is more common in calmer weather markets, because you're not as branded. I think in severe weather markets you are weather, because you are branded that way. But also on a national scale, I do feel like lately, like over the last 10 years or so, there's more of a crossover (Weathercaster Carlos).

Carlos notes the crossover or merging of the scientifically trained meteorologist with the less educated weather presenter as a way to utilize weathercasters with personality.

Meteorologist who fools you. The crossover between a highly likable, personable weathercaster and a knowledgeable scientific meteorologist is even further explored when examining the perceptions weathercasters have about being the ones with all the answers. The interactions with producers are representative of the "disconnect" between news and weather as noted by a chief meteorologist.

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It's just funny the way they [producers] perceive the weather to behave. It's interesting to me that after all these years, these producers think, in so many newscasts that they still kind of understand it. They don't realize how much they really don't understand the way weather works.

A story is revealed about what is done to fool and appease the news hungry producers in the newsroom who want to know exactly where to be for the next news hit and exactly where to have the reporters and photographers for the upcoming storm.

…you know, this is really bad…but I used to say, "Oh God, you know I don't know. It could be over here, it could be at this time." But that never seemed to work with the producers so now I just give them an answer. They say, "Where's the storm going to be?" I say, "Well, it's going to be right here at 7:00." They're like, "Okay. Great!" And they'd run off and [weathercaster laughter]. That's terrible but it actually works (Weathercaster Alice).

After further discussing and commiserating about these situations with the researcher, a sense-making story is revealed that explains the difference between newsroom knowledge of meteorology and actual weather forecasting.

Yeah. Inside the weather department we make fun of that all the time. We make jokes with each other. I say, "[Weathercaster X]! So on August 7th in 2019 at 2:00 pm, where's the storm going to be?" It's like what on earth. We get those questions all the time. With the Monsoon, obviously you know, it's very hard to say that it's going to happen at exactly a certain time, at exactly a certain place and it's going to move to an exact location. But that's what they want (Weathercaster Alice).

The fun that Alice has fooling with news producers and assignment editors about where the Monsoon will hit reinforces the idea that news sees the Monsoon as highly predictable whereas Alice does not.

An outsider without jargon. Finally, using meteorological jargon and fairly complex scientific explanations to illustrate what is going on in the atmosphere can be difficult for the viewer and the newsroom personnel. The following excerpt explains how

such a process of factual delivery can be done according to this particular weathercaster's liking. Note how the terminology and explanations are reflective of a way to reinforce the dominant broadcast meteorologist paradigm – the meteorologist is the expert and does know what is going to happen.

> Maybe you're trying to show off to me saying that… to demonstrate that you really know the scientific technology and be the supreme scientist, but it's going way over my head as a viewer. I don't know that there was necessarily much value in that other than to prop themselves up saying, "Look I'm really an expert and I know all this stuff and this is all the scientific stuff you probably don't know about but I do so I'm going to show you." I have showed velocity data from a Doppler Radar when I was in […] covering tornados and in extended coverage, you search for more things to talk about, different ways to present that weather story and people will start asking, "How can you really tell if there is a tornado there?" Or, "What is this Doppler Radar indicated tornado all about?" So you show the reflectivity data and where the rain is and where the hail is falling and the radar signature that way but you can also show the whole idea behind Doppler Radar is they shift, the wind is blowing away from or towards the radar and you can tell that by all these different colors. When the different colors are really bright and close together, that can indicate a rotation within the storm that can produce a tornado. I think if adequately explained to the viewer, then they might have some level of understanding. This is what we're looking for here. Whenever we see this, that can be a sign of, you know, you see all the same colors over here but right in this one little area we have these two colors that are right together, looks like a Christmas tree, red and green together. And if you find that together, that means the wind is going in opposite directions and usually means a spin, a circulation, a vortex. Uh oh, I didn't use the vortex word, did I? Oh, no (Weathercaster Kenny).

This long winded example reaffirms that there is conflict in trying to show what is going on in a severe weather forecast while trying not to sound too scientific. The weathercaster notes, in a sarcastic tone, that the term "vortex" is deemed by news people (mainly management and consultants) as too technical. It is also interesting to note that this excerpt reinforces the point that expert knowledge does exist and warrants the respect that producers and newsroom personnel have for weathercasters. This tenuous role of

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being the scientific expert and also being part of the news team can bring forth

apprehensions. One weathercaster who has been in the business for nearly 20 years

noted that it feels like they do not belong:

> I do feel like… I still sometimes feel like an outsider. I'm not a newsperson
> because I didn't start that way like I didn't go to communications school so I
> didn't have that… you know …way of thought I guess a lot of people did coming
> out of journalism school. I just kind of showed up and was like "hey" you
> know… sometimes I still feel like an outsider (Weathercaster Alice).

The concept of being an "outsider" as noted above is an essential part of the identity of

weathercasters. While they are part of the news team, the findings indicate that they are

differentiated by the functions of their work, the terminology they use, and by the

perceptions of others in the newsroom. The excerpts highlight the fact that many

weathercasters perceive themselves as being culturally unique within their overall

television station working environment. Additional specific characteristics that further

define the culture of weathercasters and their identity will now be examined.

Self-Identified Characteristics

The previous section examined weathercaster identity perceptions based on what

the weathercasters think the newsroom people define them to be. This section looks at

what weathercasters list as their dominant characteristics. These findings help further

explore the identity perceptions that weathercasters have about themselves.

The following tables display the characteristics of the weathercasters in terms of

what they see to be successful attributes in their professional careers and how they want

to be remembered. The results are based on self-reported comments made during the

final round of interviews. First, they were each asked to identify the top five

characteristics of successful weathercasters with one being the most important according

to their perceptions, experiences, and observations. Table 4.2 contains the results.

Table 4.2

Top 5 Self-Identified Characteristics of Successful Weathercasters

Name	1	2	3	4	5
Alice	Really enjoy the weather	Personable	Knowledge-able	Outgoing	Inquisitive
Bob	Personality	Ability to tell the weather story	Knowing when to be serious	Crosstalk and adlib skill	Being comfortable on camera
Carlos	Sincerity	A true story teller	Knowledge base	Personality	Being a professional
Eddie	Knowledgeable	Learn your micro climate	Personable – be yourself, not fake	Stature – you have to standout	Be a fun character
Floyd	Knowledgeable	Accurate	Teacher	Respectable	Person capable of error
Jane	Ability to think on your feet	Know your subject matter	Reliability	Connect with your audience	Synthesize information
Jeff	Being real, sincere	Knowledgeable	Informing at the right time	Likability	Approach-ablity
Julie	Knowledgeable	Communicator	Personable	Hard worker	Flexible
Kenny	Communicator	Versatility and flexibility	Community involvement	Know the science of Meteoro-logy	Team player – be a "Yes" person
Leah	Always learning	Know your environment and climate	Listening to co-workers and the audience	Personality – be yourself	Ability to work on all platforms
Nick	Confident performer	Humorous, light on your feet	Educated, well-read, good grasp of English.	Look your best	Knowledge of your demo-graphics and geography
Patty	Knowledgeable	Personable	Cooperative	Works well with weather team	Tune in when not at work
Sandra	Knowledgeable	Trustworthy and accurate	Charm and charisma	Be open in the social world	Personable
Sara	Communicate-convey clear, concise, weather info.	Notify public of severe weather	Likable	Knowledge of weather	Ability to track and forecast
Shelley	Presentation -on-air	Tell a convincing story	Knowledge of weather	Ability to multi-task	Take criticism
Vicki	Ability to tell weather story	Educated/know-ledge	Communicate	Personality	Likable

Knowledgeable. Findings indicate that every weathercaster interviewed listed the characteristic of being knowledgeable in their top five characteristics. Fifty-six percent (9/16) of the weathercasters had knowledgeable or a form of it (educated/knowledge and know your environment) as one of the top two characteristics.

Personality. Personality was the second most important characteristic noted by all the weathercasters with fifty percent (8/16) having this in their top five characteristics. This number increases to sixty-nine percent (11/16) when adding Jeff, Nick and Sara who indirectly addressed the characteristic of personality as being likable and humorous. The findings indicate that weathercasters with the most advanced education (graduate degrees and advanced meteorological certification) did not specifically list personality in their top five.

Communicator. While there are a variety of other characteristics identified by the weathercasters, the third most definable one involved communication. When looking at being a good communicator and story teller, forty-four percent (7/16) of the weathercasters had this characteristic in their top two. The percentage increases to fifty-six percent (9/16) of the weathercasters when including other attributes of communication such as listening to others and connecting to the audience.

There were other characteristics of importance noted by the weathercasters such as being flexible, professional, and capable of handling criticism, but the primary finding is that there are three dominant characteristics. The weathercaster is self-defined as a knowledgeable, personable, communicator.

In their final interviews, the weathercasters were asked what they want to be remembered for when they finish their weathercasting careers. Below is a table with excerpts from the full comments made by each of the weathercasters.

Table 4.3

Post Career Self-Reflective Weathercaster Comments

What would you want people to remember about you when you are done with your weathercasting career?

Weathercaster	Comment
Alice	"…that I always gave them the information they wanted in a professional manner […] you said that this could happen and you were right."
Bob	"I just want people to know that I am a hard worker."
Carlos	"I wasn't in the business for fame; I was in the business to make a difference […] if I improved the position in any way that would be my most satisfying thing."
Eddie	"…that I made them feel good and that I want them to remember me for a great smile, a great attitude."
Floyd	"…the only thing that would be cool is that 'Oh, he did teach me something' […] sparked someone's interest more in weather."
Jane	"…that I provided information that was accurate and I did it in an interesting and relatable way. That they enjoyed watching, that they were informed and entertained."
Jeff	"That he is who he is […] and you know what you're getting [with him]."
Julie	"…for being a good weather anchor and my being knowledgeable and somebody people rely on but somebody who has used that platform to do good for our community."
Kenny	"…I hope that I'm making a difference for people by giving them information that's valuable information, that helps them plan their day, helps them avoid a storm."
Leah	"That I was different […] for personality and great graphics and someone that they trust and you know maybe look up to."
Nick	"The guy who made their day […] he was so fun […] not to take oneself so seriously, and yeah, and to care when others are having a good day."
Patty	"…someone who was reliable and accurate but also just someone that's personable and enjoyed their job."
Sandra	"…like she was real, it wasn't like she wanted to be on TV or wanted to be a star, she really enjoyed what she does, she had a heart for what she was doing."
Sara	"…that I knew what the heck I was talking about and I was able to tell them what the weather was going to be like […] and was able to help them […] because a lot of people don't understand the weather."
Shelley	"…that I just taught them something that they never went away from watching me without learning something that is helpful for them."
Vicki	"I hope I am remembered for feeling like a friend. I want to feel like a friend to the viewer because we are all in this together, we're all going to work, we're all going to school, dealing with flooding, or the beautiful."

Of the weathercasters post-career self-reflections almost half of the comments, forty-four percent (7/16), relate to being knowledgeable and giving people correct information.   Being remembered as a personality was not as important but it was directly and indirectly referenced in thirty-eight percent (6/16) of the comments. Connecting to the audience and having them know that the weathercaster is a hard worker who wants to make a difference constitute some of the remaining comments.   The characteristics noted by the weathercasters in both of these tables are reflective of the identity of the weathercaster and are helpful in examining the culture.

Chapter Summary

The first part of the findings displayed information about weathercaster related technology and the changes that have occurred. It specifically noted what the weathercasters remember past weather presentation technology and think about present and future weather presentation technologies.

The second part of this chapter noted the personal stories, perceptions and comments made by weathercasters concerning routines and rituals. The weathercaster comments and ethnographic observations highlighted the symbolic web of significance found in the weathercasters' working world. While the routines were primarily connected to organizational functions, such as communicating to others in the organization, the rituals were reflective of the individualistic behaviors of each weathercaster (e.g. the symbolic warrior).

Next, the findings focused on the differences between weathercasters and newsroom personnel as perceived by weathercasters. Dichotomous relationships,

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autonomous functions, and the identity perceptions of weathercasters as presented in the interviews yield support for the premise that weathercasters perceive themselves as separate from the overall newsroom culture. The findings illustrated the autonomy versus conformity tension and documented some of the characteristics of weather culture as informed by weathercasters.

The final section looked at self-identified successful characteristics noted by the weathercasters. It pointed out that while there were many characteristics identified by all of the weathercasters, there were primarily three key characteristics at the heart of what weathercasters perceive their identities to be. They see themselves as knowledgeable, personable, communicators.

CHAPTER 5

DISCUSSION

This chapter discusses the findings about technology, routines, rituals, and culture noted in the weathercaster interviews and observations as they relate to the research questions. The four questions guiding this study were: 1) What are the thoughts and perceptions of weathercasters concerning technological advances encountered in their working environment in the past and in the present; 2) Given the changes from the past to the present, what are the thoughts and perceptions that weathercasters have toward future technologies; 3) What are the routines and rituals practiced by weathercasters before, during, and after the Monsoon; and 4) What perceived differences do weathercasters have when examining weathercaster culture in relation to newsroom culture?

Based off the findings noted in chapter four, insights to and answers concerning the above research questions will be discussed. First, an examination of the past artifacts and present adaptations of technology will be done to help understand the contemporary television weathercaster environment. This will then lead to the explication of an inductively derived model concerning the socio-technical structure of the weathercaster's environment. The socio-technical model will be presented as it connects to research questions one and two. A discussion about the model and its relation to the external factors of control and internal factors of knowledge will occur. The socio-technical model will also be applied to the pressures being felt and expressed by weathercasters and the strategic coping mechanisms utilized. Following the socio-technical model will be a discussion of the autonomy versus conformity table and the co-cultural model map in relation to research questions three and four. Following this will be a concluding

section on the applications and implications of the dissertation findings along with directions for future research and the limitations.

Past Technological Artifacts - Graphics

A discussion of the items noted in the findings begins by digging in to the past and examining the technological artifacts. A technological artifact is a ''bundle of material and symbol properties packaged in some socially recognizable form, e.g., hardware, software'' (Orlikowski, 2000, p.408). The artifacts noted in the findings are examples of previously used weather presentation technology and symbolically relate to the culture of weathercasters. The graphics and icons, specifically used to present the weather on television news in the past, will now be discussed. It should be noted that the graphics and icons chosen by the weathercaster are symbolic and reflective of the control aspect as expressed by the following weathercaster.

> We have control of our own graphics and so we pick and choose. We decide what we're going to show and how we're going to show it, how we're going to explain it to the audience – Weathercaster Kenny.

Early weathercasters did not have sophisticated weather computer technology to interact with and therefore the hardware used in the 1960s weather forecast presentation was rudimentary in comparison to contemporary technologies. Yet, even these rudimentary technologies contained a symbolic form of innovativeness and novelty. For example, the weathercaster depicted in the photo from 1968 (see figure 4.1) shows the maps not on simple boards, but rather on transparent acrylic glass, sheet acrylic or poly (methyl methacrylate) also known by the trademarked name of Plexiglass. The laboratory designed and manufactured material became popular with artists in the 1960s

such as American sculptor Leroy Lamis (1925–2010) a digital artist and educator known for his work with Plexiglas. The trend in using these materials tied into the Pop culture of the time.

> The newly emergent plastics of the 1960s were the ideal materials with which to represent the key themes of Pop culture. They represented a commitment to the future   and technology, were flexible and expendable, and were highly suited to bright colors and the application of surface patterns (Holdsworth, 2011, p.1).

Magnetic boards were next in popularity and reflect the pattern of continual change in weathercasting presentation technology.   The magnetic snowflake artifact found in the news studio at KPHO (see figure 4.2) embedded high in a large metal air conditioning vent is also symbolic of the time and circumstance. It not only verifies the use of such an object found in the 1970s but it also is an ironic icon as it would be of little use in the predominantly hot desert climate of Phoenix where snow is an extreme rarity. This may explain why the snowflake was tossed nearly thirty feet up into the top of the studio never again to fall to the news set.

Both artifacts in figures 4.1 and 4.2 also reflect the relatively simple forms of presentation technology. Even though the actual hardware was simple there were still more complex social systems involving production, such as the way the icon would be placed on the map or transmitted by the camera. Social systems in this context (i.e., production crew and weathercasters discussing the way to present the technology) would bring about more complex decisions. A close-up camera shot on the icon may be sufficient but then the production camera operator would zoom in on the map and follow the pointer stick controlled by the weathercaster. There would be social interaction

reflected in the use of the technology. While not as concrete as the documented artifact, social systems and work flow are relevant.

> …any artifact, has materiality in a concrete sense that production systems and ''work flow integration'' do not. For sure, systems of production do involve material artifacts and these certainly have material properties, but systems of production are also social systems (Orlikowski, 2000, p.408).

The television weather production social system was changing with new technology.   Simplicity was diminished with the advent of computer technology in the 1980s and weathercaster work-flow evolved into greater complexity. Weathercaster Carlos expressed how he felt about this transition period to higher levels of graphic complexity when he noted to management that he was "not a graphic artist." During this time Carlos felt the pressure to become a computer expert even though that was not what he was originally trained to do as weathercaster. He points out the evolution of weather computer technology when stating that back then the computers were "not user friendly" but today "the technology has come so far now that you don't' have to have a lot of experience to make a great looking map to tell a great weather story." The observation from Carlos that the technology gets easier to work with the more it advances, may partially be attributed to better and faster computers (i.e., Moore's Law), but it is also a result of exposure to better, user friendly computer programs designed by WSI[20] who work with large amounts of data coming from NOAA and the NWS to create valid inputs into television weather computers. Discussion about these larger external forces involved in the weathercaster's technological environment will now be done.

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[20] Historically, other corporations such as Kavouras, Inc. and also WCI but as the two largest companies have merged the recognized dominant corporate organization is WSI.
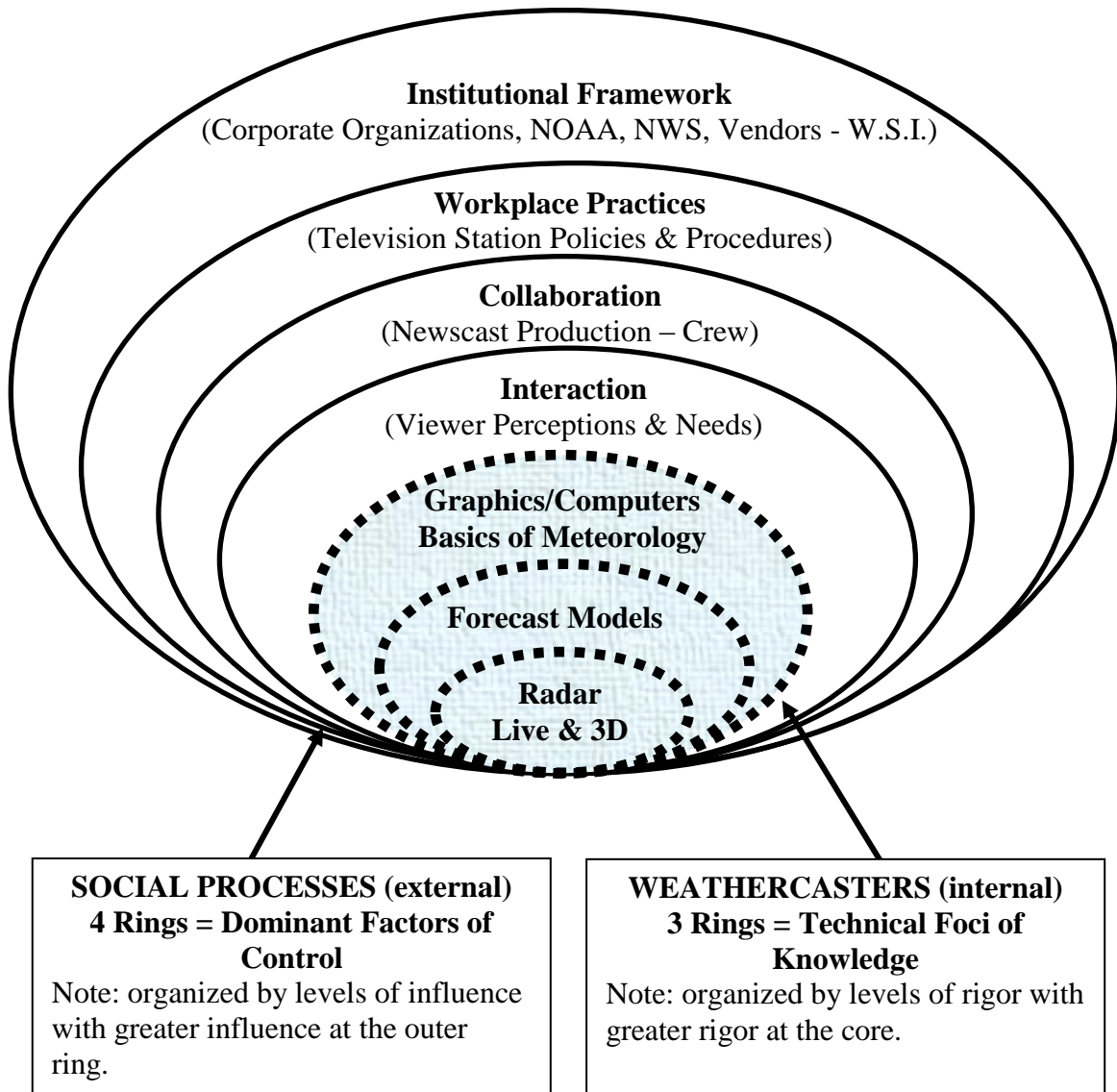
Present Technological Environment

Vendor supported computer graphics and computer systems have taken complex meteorological data and merged it with visual technology. This allows the weathercaster to move to a new level of sophisticated computer system usage and has also brought a greater ability to manage and display large amounts of data. The WSI innovative engineers and designers have implemented highly detailed, quantitative, weather graphic production and management computer systems (e.g., WSI software called MAX). The connotation in the name MAX is that the computer engineers and software designers went to the "max" when writing this program. The complexity is reflected in the weathercasters' views, for example when weathercaster Floyd comments about getting "…lost in all the craziness. But it can get crazy – it's [the weather computer] a huge tool," he says and the trick is to be able to use the technology yet still be personable. WSI puts weathercasters through extensive training programs both at the local television station and at weather conferences as well. The vendor is aware of the complexity factor and supports its system with phone and online customer services and resources. The current reality is that if the weather computer is not working there are not a lot of options for the weathercaster to show graphics on-air; the days of the hand drawn map or physically tangible weather icons are gone. Prior to the computer era the weathercaster could still go to a "real" graphic but now they are all "virtual," presented in a digitally created space (chroma-key). This virtual world of television weather forecasting graphics and icons places considerable control in the vendors who digitally create the weather icon graphics.

Socio-technical structure of control and knowledge. It is important to note that control is not solely situated in the corporate vendor WSI. The dominant vendor (WSI) is integrated with large governmental agencies (NOAA & NWS) who supply information (i.e., data, sensors, forecast models, etc.) and the broadcasting corporation's (i.e., Fox, Gannett, Meredith, Scripps) local station owners who contract with WSI are seen to be at the top of the social system and represent the institutional framework as noted in figure 5.1 below. Control is defined in this organizational context not only as those who supply resources of information but those entities who influence the weathercaster. The hierarchy of control is reflected in the layered outer rings of figure 5.1. The structure of the model is not meant to be in absolute order as weathercasters may be more controlled, at times, by an internal process (e.g., collaboration or interaction) rather than the institutional framework or workplace practices. While the model is reflective of the norm and constructed from insights and observations, it is conditionally applicable. Also, the technical foci of knowledge represented by the three internal dashed rings comprise areas that the weathercaster can control and are situationally and individually different for each participant. The following figure is, therefore, an interpretive display of the socio-technical structure of control and the technical foci of knowledge found in the contemporary television weathercaster environment.   A final note before displaying the figure is that the concentric circle design does reflect Shoemaker and Reese's hierarchy of influence model (1996) as their model describes five levels (i.e., journalist, media routine, organization, extra-media, and ideology) applied to media content. The socio-technical model displayed here is structurally similar with an individual at the center but its application, function, and analytical framework is different.

Figure 5.1

Contemporary Television Weathercaster Environment
Socio-Technical Structure of Control & Knowledge

Institutional Framework
(Corporate Organizations, NOAA, NWS, Vendors - W.S.I.)

Workplace Practices
(Television Station Policies & Procedures)

Collaboration
(Newscast Production – Crew)

Interaction
(Viewer Perceptions & Needs)

Graphics/Computers
Basics of Meteorology

Forecast Models

Radar
Live & 3D

SOCIAL PROCESSES (external) **4 Rings = Dominant Factors of Control** Note: organized by levels of influence with greater influence at the outer ring.	**WEATHERCASTERS (internal)** **3 Rings = Technical Foci of Knowledge** Note: organized by levels of rigor with greater rigor at the core.

It is logical to have large organizations on the outer ring of the model for

"surrounding every technology are institutions whose organization – not to mention their

reason for being – reflects the world-view promoted by the technology" (Postman, 1992,

p. 18). Additional reinforcement for the model noted in figure 5.1 now follows while

discussing some of the important findings relevant to research question one about the present use of technology in weathercasting.

Figure 5.1 shows the weathercasters at the internal core of the model represented by the dashed lines which indicate the permeability of the external social processes. The control exercised by the weathercaster is related to the enabling and constraining forces noted in the external rings. For example, the vendor (WSI) enables and constrains the weathercaster by providing digital weather icons to use on a seven-day forecast, enabling the weathercaster to tell the long-term weather story, but these icons can also be viewed as constraining because they limit the visual representation to prescribed icons. These prescribed icons may not best represent the forecast when they have information that could be misleading such as when there is a slight possibility of a thunderstorm but the only icon representing a thunderstorm makes it look like a massive torrential downpour with excessive amounts of lightning. The predesigned vendor created digital icon is misleading as to what may actually happen and the weathercaster may lack the control and ability to change this visual icon in the forecast. The weathercaster's technical foci of knowledge about weather computer graphics and how to manipulate them (e.g., add or subtract thunderstorms, lightning, etc.) situates the locus of control more towards the center of the model if the weathercaster is competent with the technology.

The desire to be competent with the weather computers and computer graphics technology is a primary finding. As weathercaster Leah notes, "I love graphics because it's how you draw in your audience; it's how you make yourself different. And I always want to be different." The evolution of weathercaster technology demands that the knowledge foci and skill set of the weathercaster constantly changes according to the

times. This finding helps answer research question one about weathercasters' thoughts concerning technological advances encountered in their working environments.

Contemporary weathercaster interactivity with technology (e.g., touch screens and citizen weather reporters posting weather pictures) noted in the findings chapter also supports the socio-technical model (figure 5.1). The desire to be up-to-date and "in" on the latest viewer trend was reflected by Weathercaster Eddie who had a considerable amount to say about "cord cutters" and the younger, up and coming generation. His concern with the fragmented audience and reduced live television viewership also explains what he is trying to do now with technology which is to develop a greater social media and online presence.   This is represented as the ring labeled interaction (viewer sees and needs) which is found closest to the weathercaster in figure 5.1 and can directly affect what the weathercaster says or puts on the air. Showing viewer pictures, maps with detailed local cities where viewers reside, pinpoint forecasts, street level mapping of radar and storms, and social media are all ways the weathercaster connects to the viewer to meet their needs and be sure they see what they want to see and hear.

The ring or concentric circle on figure 5.1, above the interaction circle, is synchronous collaboration which happens during a newscast. Synchronous collaboration is critical for a successful newscast and weathercast as well. If a live remote report is not ready to go at the moment selected in the newscast then it can cause a snowball of reactions in the rundown and may eventually affect the weathercast in terms of both starting time and duration. If there is even a slight delay when an anchor tosses to a reporter or a weathercaster in the field as can occur on satellite transmissions then there is some awkwardness in the broadcast. The viewer may think the reporter was not ready or

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not hearing it. Technology can both help and hinder the social system of communication

when new forms of technology present themselves as is the case noted in the findings

concerning mobile backpacks. The ability to give a report from almost anywhere a cell

phone can send a signal from without having a large vehicle like a news van with a

microwave antenna or a satellite truck is liberating. This freedom, derived from new

technology, also has some time delays making it problematic for the synchronous

collaboration needed to make a newscast appear seamless. Producers and reporters were

observed using the term "look live" when the delays from the mobile back pack were

egregious or when the live shot was not really needed to make an accurate report. In the

"look live" a reporter will send the digital video report to the station via the mobile pack

shortly before the start of the newscast. The production personnel then quickly place that

digital video file into the automated rundown so that when the anchor tosses to the

reporter it appears to be a live report but in reality it was digitally recorded minutes

before. This allows synchronicity to prevail and the overall newscast looks very

coordinated and smooth. Additionally, the "look live" helps the weathercaster as it does

not disrupt the weathercasters' timing and presentation as can happen when a live shot

does not work, creating the need for the weathercaster to fill more time, or if the live shot

goes over time then the weathercaster has to cut time out of their presentation.   The

social process – the system of communication coordinated by the newsroom personnel –

allows the mobile backpack technology to work in a synchronous collaborative work

flow environment.

Coordinated workplace practices are further facilitated on a higher level by

television stations as is noted in the next ring – the circle on figure 5.1 just below the top

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circle. Television station policies and practices reflect this especially when looking at the technology Ignite (see findings page 89). As noted in the findings, Ignite allows single-operator (only one production person) capabilities. While newscasts observed in this study using Ignite employed at least two production crew individuals in the control room, it is possible to have only one technical production crew member if the teleprompter is operated by the talent and not by production. This push toward automation is seen as a coordinated workplace practice implemented by the station and driven by new forms of computer technology. The reality of having human jobs supplanted by computers is a by-product of Ignite. While Ignite's implications are primarily felt on the production side of the news product, weathercasters agreed that it is possible to see their workplace activities not only augmented but supplanted by automation in the form of specialized computer technology. The weathercasters did not fully buy into the idea of being replaced by technology: an idea driven by technological determinism.

> According to technological determinists, particular technical developments, communications technologies or media, or, most broadly, technology in general are the sole or prime antecedent causes of changes in society, and technology is seen as the fundamental condition underlying the pattern of social organization (Chandler, 2014,p.3).

Weathercasters are not willing to accept the deterministic viewpoint that automation and virtual weathercasters are a coming reality as noted in the findings by weathercaster Laura who stated, "I think it is better to have the actual person in there." This is representative of the weathercasters' responses to research question two concerning the thoughts and perceptions that weathercasters have toward future technologies. Unlike operational NWS meteorologists who worry that "machines will replace them" (Zaloom, 2009, p.611), the weathercasters are not extremely concerned about becoming obsolete.

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In review, the model (figure 5.1) depicts the external and internal structure of the weathercaster's environment. The external factors are connected to control; the internal factors are determined by the weathercaster's foci of knowledge. The technical foci of knowledge are what contemporary weathercasters see as being of importance as they move from general knowledge about computer graphics and meteorology to more intense levels of rigor needed to understand forecast models and radar (live and 3D). In the next section there will be more discussion about the insulated nature of weathercasters as they described themselves as being in a bubble. This psychological bubble is represented as part of the socio-technical model where the weathercaster (seen at the core of the model in figure 5.1) is drawn by a textured core with thick, dark, dashed lines that separate it from socially controlling levels. The bubble perspective and the pressure associated with it, along with strategic coping mechanisms, will now be discussed while moving into a discussion about research questions three and four concerning routines, rituals, and culture.

Strategic Coping Mechanisms

Both the routines and rituals noted by the weathercasters are seen as strategies used to deal with the stress and pressure of performing live on-air newscasts. The stress and pressure escalate during severe weather and the behaviors and actions of weathercasters change accordingly. The findings indicate that strategic coping mechanisms become evident during severe weather events. For example, communication flows increase between weathercasters and newsroom personnel and there are war cries given by the weathercaster along with changes in food consumption and talking out loud

behaviors. Such intense situations in the live local newsroom are created not solely from the severe weather environment but more directly from the interactions (social processes) with others in the external rings noted in figure 5.2 below. Downward flows of information from the outer rings to the weathercasters create pressure on the weathercasters who can feel as if they are in a bubble.   The following model displays this bubble and the socio-technical structure of pressure in the contemporary weathercaster environment during severe weather operations.

Figure 5.2

Contemporary Television Weathercaster Environment

Socio-Technical Structure of Pressure

Institutional Framework
(Corporate Organizations, NOAA, NWS, Vendors - W.S.I.)

Workplace Practices
(Television Station Policies & Procedures)

Collaboration
(Newscast Production – Crew)

Interaction
(Viewer Perceptions & Needs)

Graphics/Computers
Basics of Meteorology

Forecast Models

Radar
Live & 3D
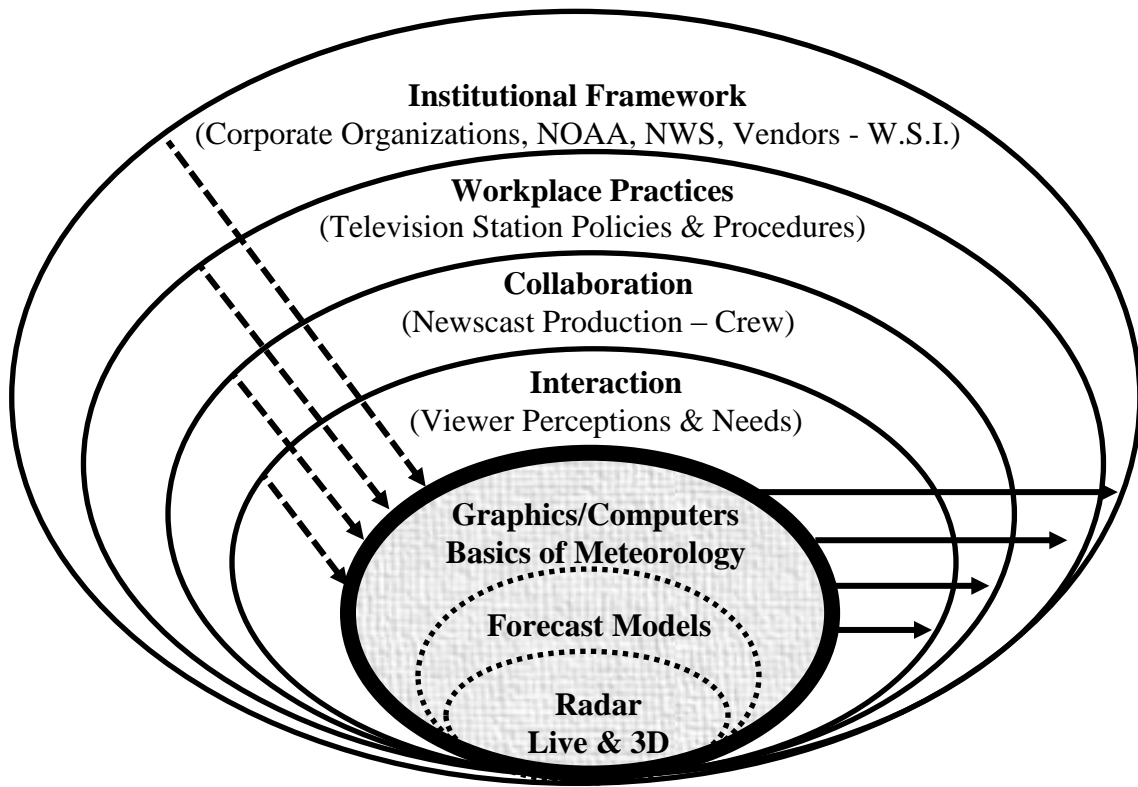
KEY

Thick Lined Dark Core Oval = Weathercaster "Bubble"

Arrows = External Pressure

Arrows = Internal Pressure (released)

Explanatory note: external pressures enhanced by severe weather create greater pressure on the weathercaster (indicated by the dashed arrows pushing down). External pressure is regulated by the weathercasters technical foci of knowledge and the use of strategic coping mechanisms (i.e., communication flows, war cries, and other routines and rituals noted in the findings) represented by solid arrows pushing out from the core.

Socio-technical pressure examples. When severe weather breaks, it was observed that there is typically a lot of activity around the weather center and the analogy is of being in a shark tank. The sharks (newsroom personnel) metaphorically sense blood in the water, for example the possibility of a dramatic news story such as flooding or a water rescue. The sharks are waiting for the "feeding frenzy" in terms of the breaking news. Swarming sharks are thinking about who is going to get in trouble and how they can tell/show the story. As they circle around the weather center or weathercaster, questions are posed by the sharks. Where do they send reporters, photographers, and storm chasers? How bad is it going to be? Do we need to do cut-ins to programing? The questions can be highly difficult and daunting to a novice weathercaster for they not only involve the allocation and direction of resources (sending live trucks, personnel, etc.) but more importantly they are relevant to the safety of others, especially reporters and photographers when they are entering the elements such as lightning strikes, flooding, wind and hail. Winds may cause damage and down trees and power lines where the reporters are going. Flooding factors and the possibility of the news people not simply reporting the news but becoming the news is a real threat as happened on May 18, 2015, to a reporter whose vehicle was washed away in flooding (Oberholtz, 2015).

The social and psychological stress of having to make decisions regarding when and where to send news personnel in dangerous situations is daunting. If a weathercaster does not have a sound knowledge of synoptic meteorology he or she can be caught off guard and unaware of when and where the severe weather may hit. The weathercaster needs to know how to forecast using the tools given, placing greater emphasis on computer forecast models and radar technology. The greater the expertise in these areas,

the more perceived control is generated by the weathercaster. Yet, weather is uncontrollable and at times unpredictable. A disconnect between what should happen and what does happen with the actual weather creates psychological pressure. The weathercaster has multiple levels of psychological pressure coming from the controlling external rings noted in figure 5.2 and the weathercaster utilizes the technologies available (computer graphics, forecast models, radar, etc.) to control the pressure. Inadequate training, knowledge and incompetence can lead to a weathercaster's lack of control or inability to handle the pressure. This can create additional strategic coping mechanisms such as those behaviors noted in the rituals area of the findings that will now be discussed.

The weathercaster's lack of control can be offset by controlling more of what they have access to such as the physical objects they possess. The weathercasters act out by doing specific actions with physical objects. For example, the symbolic warrior story noted in the findings pointed out how weathercaster Eddie would layout all of his clothing the night before, like a warrior getting ready for battle, and would do "a little meditation." The ability to control what he was going to wear and to place faith in the ritual of getting motivated – psyched up – the night before is a strategic coping mechanism used by the weathercaster to battle the stress and pressure. Weathercaster Bob's strategic coping mechanism was interaction with a physical object, his wedding ring, which was his grandfather's ring: a spiritual ritual to connect to a deceased ancestor and to deity. Weathercaster Jane used the physical object of the ear piece or IFB as a coping mechanism to gain not just comfort but control over the information flow. Primping and mirror talk are also noted in the rituals area of the findings and can be seen

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as ways to control what the weathercaster has (i.e., hair, make-up, on camera look) or to get reinforcement from others (i.e., small talk from news anchors, reporters).

One final strategic coping mechanism used by the weathercasters is monitoring the opposition. The findings pointed out that senior weathercasters (those with 15 years or more of experience) focused less attention on what other weathercasters at the other stations were doing on air. Also, those with more advanced degrees noted that they spend less time looking at what others are doing. The weathercasters with less knowledge in the foci (noted in figure 5.1) appear to monitor the competition more as a strategic coping mechanism.

This section has helped answer research question three. It reviewed some of the routines and rituals practiced by weathercasters. Specifically, it pointed out that many of these weathercaster behaviors are strategic coping mechanisms used to deal with the pressures and stresses that come from live television weather forecasting. The next section will discuss the items relevant to the final research question concerning culture.

Understanding the Co-cultural Context

Given the dichotomous relationship examples, autonomous function examples, and the identity perceptions noted in the findings chapter a table was constructed to display the co-cultural context (see 5.1). Each of the five categories listed under the newsroom and weathercaster areas are derived from the examples given in the findings and follow a contrasting viewpoint based on conformity versus autonomy. Newsroom culture is generally aligned with conformity, whereas weathercaster culture is noted as

being more autonomous. Explanation of the table and examples for each of the five

categories will now take place followed by a discussion of the term co-culture.

Table 5.1

Newsroom & Weathercaster Co-cultural Constructs: Conformity versus Autonomy

Newsroom Conformity	Weathercaster Autonomy
scripted / drama / hype	unscripted / ad-lib / reality
time control of weather segment	total control of weather segment
follow producers, managers, consultants directives	"lone-wolf," creative, independent direction
proximity – close, tight relationship	proximity – far, distant relationship
news centric	ego & weather centric

While not exhibiting complete polarity, each category does have varying levels of

contrast. For example, the scripted nature of news lends itself nicely to control and

conformity as each word or sentence can be timed into a newscast. A ten second

introduction to a news package is exactly timed, as is the news package, to the second. A

weathercast, however, is not scripted but is ad-lib; therefore, the exact timing varies

depending on the amount and type of information given by the weathercaster. More

content, graphics and information may lead to more time needed such as occurs during

severe weather. Occasionally weathercasters are given a script from a producer or writer to read while showing some damaging weather video or given a scripted promotion. This is not the norm and the weathercaster is given large amounts of autonomy. Usually the weathercaster does need to fit the presentation into a set time given by the producer but there is flexibility especially during the Monsoon. This flexibility and situational/conditional change accounts for varying levels of contrast found in this first category and in the other four categories as well. Regardless of the amount of contrast, the fact is that weathercasters perceive these differences and act accordingly.

Time control is typically reflected in the hierarchal power structure of the newsroom. The news director and the assistant news director are at the top of the control structure with the executive producer and producers coming next. They are followed by the news anchors, reporters, and weathercasters or those sometimes referred to as talent. The power of the on-camera talent can supersede the producers and higher level managers depending on the level of respect, clout and influence exercised by the talent. The power structure can be in a state of flux depending on the seniority of talent and as noted by Breed (1955) in a study of social control in the newsroom, there are stages of progress for staffers working in the newsroom. According to Breed, those with "star" status are able to transgress policy and the norms of operation more easily than those with "cub" status or those who are low in seniority.   Each newsroom contains its own unique power structure in terms of who can get "on-air" time allocated to them during the newscast. The weathercaster is given a specific amount of time from the producer but weathercasters with "star" status may take liberties with these time constraints, especially during severe or breaking weather situations.

The term "lone-wolf" was used to describe the difference between weather culture and newsroom culture by weathercaster Jane who had experience as both a weather and a news anchor. Carlos, another hybrid, also stated that the weathercaster was "…the producer, the editor, the writer, everything. You're completely in charge." The fact that Carlos was no longer in charge or complete control was the biggest "culture shock" for him as he made the transition to news anchor. Carlos reinforces the contrast in newsroom culture and weathercaster culture.

The proximity of the weather center to the newsroom not only signifies how close the actual physical weathercaster working area is to the assignment desk and newsroom but it also indicates a virtual and psychological relationship as well. As noted in the findings the actual physical distance of the weathercasters' work area in relation to the newsroom was a function of technology (see page 116). Each station's physical distance situation varied depending on the layout of the newsroom and weather equipment along with the location of the studio. Close, tight knit relations with assignment desk personnel, photographers, producers and other newsroom people are facilitated by phone and electronic methods such as "top lining." Top lining occurs in newsroom software used by both newsroom personnel and weathercasters to see the rundown, produce the newscast, and write script. If up and running at the weathercasters' work area the top line will pop up like an instant message and give text and information to individuals and to a group. Like an email or text message it can facilitate the flow of newsroom information. Mainly used for news items, the weathercasters observed did not communicate to others in the newsroom by top lining as much as by other means such as phone and face-to-face conversations. This is partially because the weathercaster is primarily working on the

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weather computer system making and monitoring graphics and weather forecasts and is not always on the newsroom computer software system. A more psychological reason is that some weathercasters prefer to be left alone so they can get the "scientific" aspects of the weather forecast done without being interrupted by the sharks as was observed with Kenny who noted that the weathercaster has "expertise that other people in the newsroom wouldn't be able to provide." If a weathercaster thinks they are smarter than those in the newsroom they may psychologically position themselves far or distant from the newsroom personnel.

The final category relates to centricity - news centric versus ego and weather centric. The idea that newsroom personnel are centered on news as the driver of content is not unique but what is more interesting is the fact that weathercasters see other dominant drivers as part of the overall news product. The ego centric version was related by weathercaster Jeff who told the story of when he goes to dinner with the news anchors and his name is called out first by the public. Jeff explains that this is because he is not giving them death and destruction type of information but that the public related to him as being "one of their buddies." Later Jeff goes on to state that "I have always affirmed this and I still will as long as I'm in this business, it comes down to people and personalities." His view of news and weather is not driven by content and information but rather by personalities and ego.   The merging of personalities with science expert types of meteorologists (information and content driven types of weathercasters) is seen by weathercaster Carlos to be increasing "over the last 10 years."   Indicating that even in the centricity category there can be back and forth fluctuations occurring between and

within each side – news and weather. Like the other categories noted above in table 3, there is no true binary.

Prior to conducting this dissertation research, weathercaster culture was perceived by this researcher to possibly be separate and unique from newsroom culture. Weathercaster culture was not defined as a sub-culture (a term seen as too subversive) or as a bi-culture (ethnically differentiated as noted by Silcock, 2005) but it was able to be aligned with the term co-culture. The discovery and application of the term co-culture occurred during the writing of this discussion chapter. The Dictionary of Media and Communications states that a co-culture is "a cultural strand that exists alongside a mainstream culture. For example, some aboriginal societies have preserved their original cultures, which exist alongside mainstream culture" (Co-culture, 2008).   In this context, the mainstream culture is the newsroom culture and the cultural strand that exists alongside is weathercaster culture. The idea of a co-culture applies to this study when perceived as being similar to the term "intra" cultural noted by Sitaram and Cogdell (1976) where one culture, in this case newsroom culture is seen to have weathercaster culture as part of it or on the inside; within. The newsroom personnel and weathercasters cohabitate (i.e., in their working world) and co-create news together in an organization or television station. While the term co-culture has other connotations and applications (e.g., standpoint and muted theory - Orbe, 1997) it is applied in this context as a descriptive term used to explain the unity and division found in the conformity versus autonomy context.

In conclusion, the answer to the fourth and final research question concerning cultural differences is found in Table 5.1. The table synthesizes and consolidates the

findings on dichotomous differences, autonomous functions, and identity perceptions. The discussion will now examine cultural model maps and their applications to this study's findings.

Co-cultural Model Maps

The analyzing, organizing, and consolidating of content from forty-eight in-depth interviews along with observations made during the research period yielded insightful data about weathercaster culture in the midst of the Monsoon. This data is applicable to further understand the processes of change that occurs when severe weather happens. The following model maps (Figures 5.3 & 5.4) mostly constructed on the qualitative data, are representative of this particular case study. The co-culture maps represent two different time periods – during non-severe or inactive Monsoon weather and during severe or active Monsoon weather. Discussion of the various attributes that compose the models, mainly the horizontal and vertical dimensions, will come after the two figures. The discussion will also include a comparison/contrast of the model maps (Figures 5.3 & 5.4).

Figure 5.3

Co-cultural Model Map 1

Weathercaster and Newsroom Culture

Non-active Monsoon
(No severe weather)

More Influence

Newsroom
Personnel

Weathercasters

Less Influence

Conformity > ---------------- < Autonomy

Figure 5.4

Co-cultural Model Map 2

Weathercaster and Newsroom Culture

Active Monsoon
(Severe weather)

More Influence

Newsroom
Personnel

Weathercasters
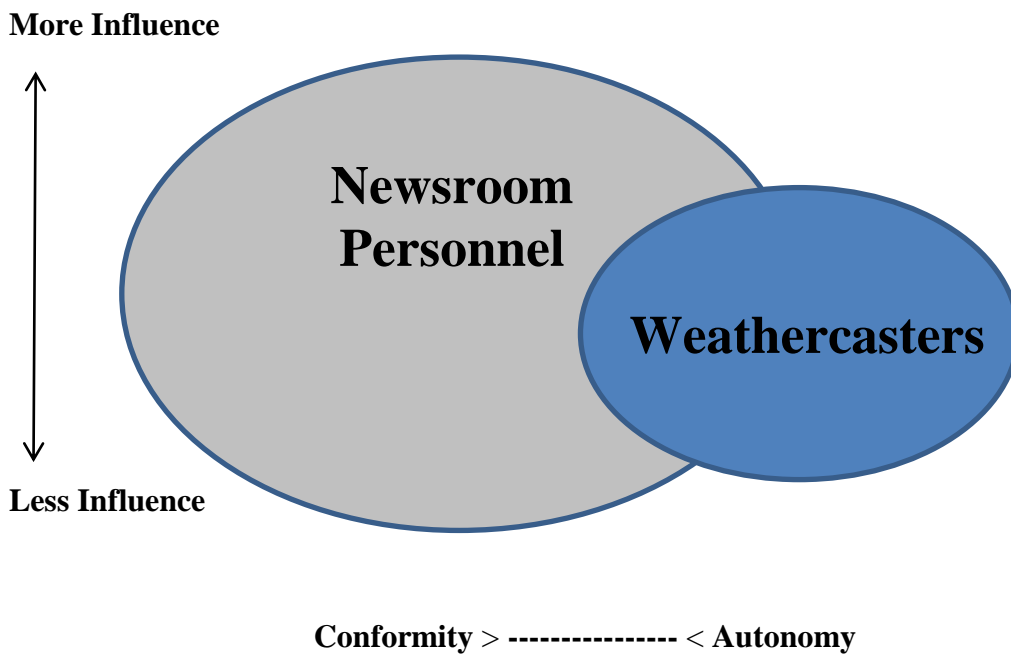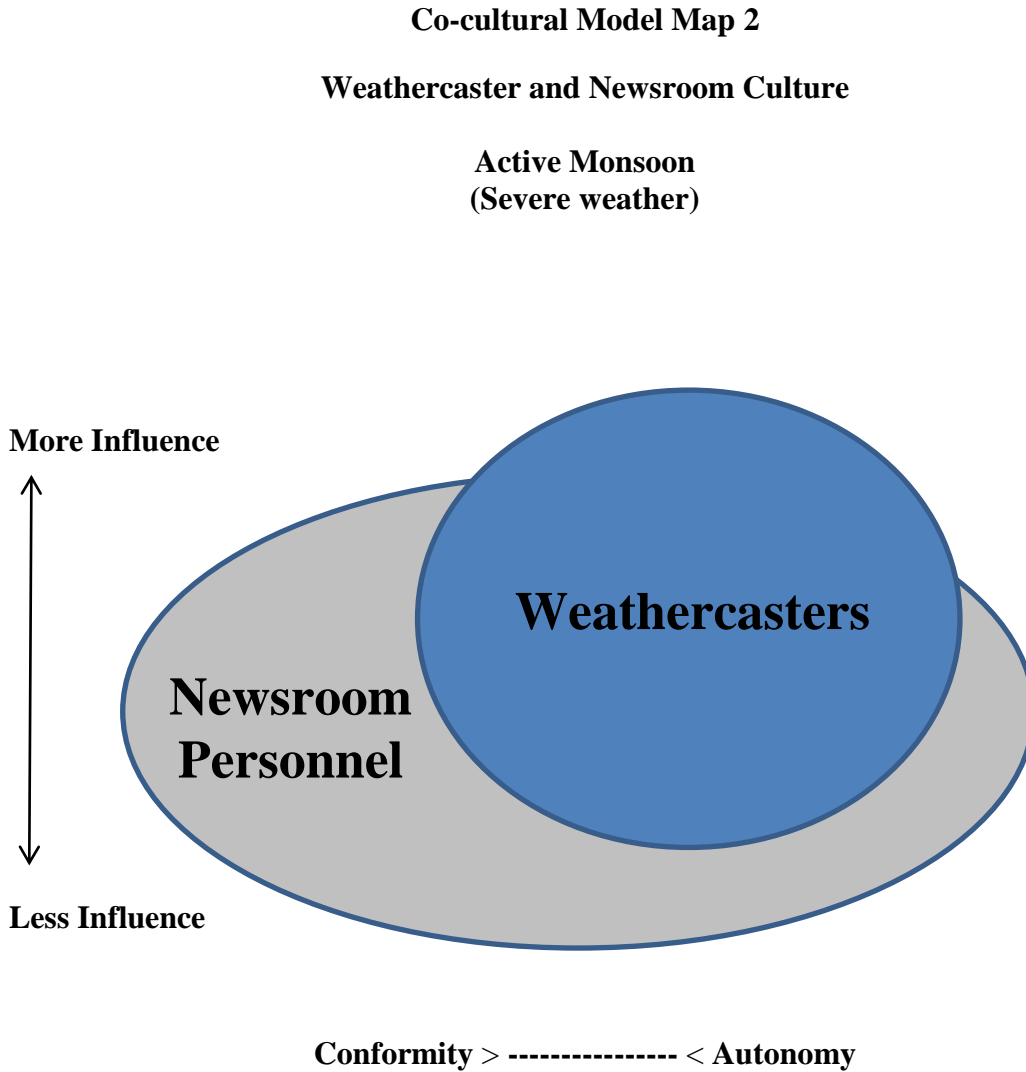
Less Influence

Conformity > ---------------- < **Autonomy**

Co-culture model map number one has the bottom or horizontal axis constructed around the conformity versus autonomy dimension noted earlier in Table 5.1. Newsroom personnel align more on the side of conformity whereas weathercasters are more aligned with autonomy. The map positions the newsroom personnel closer to the conformity side and the weathercasters are further aligned with the autonomy side. The vertical side of

the model goes from less influence at the bottom to more influence at the top. The newsroom personnel are more aligned with the higher levels of influence and the weathercasters are lower on the vertical axis indicating that they have less influence. An example will help illustrate how this operates. During non-severe weather the emphasis is on news story production that has little connection to weather. The weathercaster may not be asked about what relevance weather has to the daily newscast and will not be intensely communicated with by newsroom personnel. In a quiet weather situation the weathercaster has a large amount of autonomy and is not influenced much by newsroom personnel.

The second co-cultural model map has the same vertical and horizontal dimensions, but it positions both the newsroom personnel and the weathercasters in different areas. During severe weather the weathercaster has much greater influence over the newsroom decision processes. The weathercaster is asked to come to planning meetings and is given access to greater news gathering resources such as reporters, photographers, the helicopter and other live video feeds (i.e., traffic cameras, remote cameras). Newsroom personnel give priority to weather before, during, and after severe weather occurs.

The weathercaster also moves more into the conformity area as they need to follow the formats and guidelines established by producers and management. Additionally, the newsroom personnel, producers and photographers become more autonomous as they adapt and change the rundown and the types of news stories that may be covered. For example, the morning news meeting had a reporter and photographer going out to cover a crime story but as the weather developed and became more severe in

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the afternoon, the reporter was then sent out to storm chase. The influence level of the newsroom personnel continues to be high, as noted by their position on the map, but the weathercaster position changes more in terms of influence and can even supersede newsroom personnel when doing cut-ins over programming in emergencies.

Overlap of the two groups indicates the intensity of communication between the weathercasters and newsroom personnel. More overlap indicates greater amounts of communication as was observed during severe weather. Less overlap indicates reduced communication as in the non-severe context. The type and amount of communication between weathercasters and newsroom personnel varies on individual weathercaster basis (some are more interactive or talkative with the newsroom than others) but generally speaking the severe context is perceived to have at least three times more communication episodes[21] than a non-severe weather event. This is based on the observation of how many more times a producer would interact (have a communication episode) with a weathercaster in a given newscast cycle. Typical communication episodes with the producer were two to three times in a given news production cycle (before the newscast, during the newscast, and sometimes after the newscast). While interactions during the newscast vary depending on the length of the newscast and the types of verbal cues and information given, the overall interaction during a newscast done in severe weather mode was at a minimum double to triple the amount as during a non-severe newscast. It should also be noted that communication episodes with multiple other newsroom personnel (not just the producer) occur as well. The co-cultural maps are concept model maps and are

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[21] A communication episode is seen as a brief conversation or "a unit of temporally and topically bounded communication" activity (Crowston, 2005, p.105).

not meant to be graphically proportional to an exact statistical number but they do show a 20% to 30% overlap in the non-severe environment and an over 75% overlap in the severe model map. The greater overlap in the severe model map is a representation of more communication. Overall, the model maps indicated the varied context that the weathercaster operates in and when the two maps are juxtaposed it is possible to see changes that occur when entering into severe weather broadcasts.

Applications & Implications

Various applications of the models and the implications derived from this research are now explored. Specific applications to weathercasters working in severe weather markets are of primary importance. Knowing about the increase in communication needed to facilitate proper severe weather coverage can help to overcome employee problems and enhance the quality of the newscasts and weather forecasts. Discussion of how to increase flows of information with newsroom personnel can also alleviate confusion and help set policies and procedures on how to handle severe weather operations more effectively.

Applications of the socio-technical model of pressure may allow for psychological stress to be reduced in weathercasters. The external part of the model noting the multiple levels of pressure can help a weathercaster understand why they feel like they are in a bubble. Examining the bubble creating psychological process and the strategic coping mechanisms used to deal with pressure and stress helps to further define and delineate solutions to the problems weathercaster may have when severe weather occurs. Finally, a greater understanding of the dominant factors of control and the

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specific technical foci of knowledge facilitates increased understanding of the contemporary television weathercaster environment. The research, knowledge and deeper understanding of the understudied environment of weathercasters may also be applied to other on-air newsroom personnel such as sports anchors, reporters, traffic presenters, and others.

The implications of this dissertation research are both positive and negative. A positive aspect is that enhanced knowledge of the controlling motivations exhibited by weathercasters allows newsroom personnel and management to obtain a better perspective on how to lead and interact with weathercasters. Giving the weathercaster too much constraint can be limiting to the overall news product and not yielding enough autonomy to the weathercast can create negative feelings and even chaos. This research examines the control and influence dynamic between newsroom personnel and weathercasters and how it changes depending on the weather situation.

Future Studies

Future studies involving the concepts address in this research should focus on the importance of cultural issues for news personnel, weathercasters, and other on-air talent. Specifically, future studies need to further examine control, influence, conformity, autonomy and power in the newsroom. For example, studying weathercasters and newsrooms where excessive control and influence is exercised, and newsrooms where less influence and more autonomy is prevalent, would advance this research. Looking for support to the basic premise – autonomous individuals can bring greater levels of

creativity and insight to a fluid and dynamic event such as breaking weather – would also be an important area to focus on in the future.

Examining other newsrooms and television news markets with severe weather would add value by finding similarities and differences with the weathercaster co-cultural studied in this dissertation. Future case studies on a larger scale could include not only local stations and markets but national and network entities as well such as the Weather Channel, or network news (i.e., ABC, CBS, FOX, NBC). How does a co-cultural environment operate in these larger contexts and are the tensions of conformity and autonomy similar to local level news? The contrast of micro and macro news organizations in relation to weathercaster culture would also add greater perspective.

Additional future studies may examine the socio-technical model in more detail. Taking a socio-technical systems[22] approach which is used in design methods for systems engineering (Baxter & Sommerville, 2015) would be a more technical quantitative method to employ. The term "socio-technical systems" is widely used to describe many complex systems, but there are five key characteristics of open socio-technical systems (Badham et al., 2000). According to Badham, et al., they are:

- Systems should have interdependent parts.

- Systems should adapt to and pursue goals in external environments.

- Systems have an internal environment comprising separate but interdependent technical and social subsystems.

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[22] The term socio-technical systems was originally coined by Emery and Trist (1960) to describe systems that involve a complex interaction between humans, machines and the environmental aspects of the work system.

- Systems have equifinality. In other words, systems goals can be achieved by more than one means. This implies that there are design choices to be made during system development.

- System performance relies on the joint optimization of the technical and social subsystems. Focusing on one of these systems to the exclusion of the other is likely to lead to degraded system performance and utility.

Future studies could examine television station newsrooms for each of the five key characteristics noted in the aforementioned open socio-technical system design approach. If done using systems theory, there would be additional depth and support for the socio-technical model map presented in this research.

While implementing systems theory could be a productive way to inform new studies the idea of cyber-anthropology could also be utilized.

> As a theoretical construct, Cyber-anthropology is concerned with the merger of natural and artificial worlds mediated by the human imagination, as well as compatibility between people and digital life they have created. As an empirical study, Cyber- anthropology deals with the psychophysiology and psychophysics, semantic and semiotics of human engagement with computer-generated reality that is viewed as a Complex Interactive System (Liben & Liben, 2005, p. 146).

A relatively recently developed concept called psychological culture is viewed as a vital part of Cyber-anthropology. Psychological culture is defined as "the study of a person's competence associated with the use of modern technology and individual acceptability of technological innovations" (Liben & Liben, 2005, p. 146). The weathercaster's interaction with technology and innovations, such as the virtual digital world of weather graphics, the green screen environment, and the "psychological culture" created by these interactions would be of interest to future studies.

Another focus of future research could extend from the work of Orbe (1998a, 1998b) who examines a co-cultural theory based on culture, power, and communication. While Orbe focuses primarily on the standpoint of traditionally muted groups it could be interesting to examine the idea of marginalized and/or suppressed groups found in the newsroom including weathercasters, sportscasters, reporters, and minorities. Explicating the co-cultural communication model based on the intersections of three communication approaches: non-assertive, assertive, and aggressive along with the three preferred outcomes: separation, accommodation and assimilation would add a unique deductive theoretical approach and additional insight to this research.

New forms of television broadcast technology will continue to alter the way news work is done. Future studies that explore the possibilities of how newsroom innovations and weathercasting will be changed by technology will need to focus on augmented reality, hereafter referred to as AR. (Pavlik & Bridges, 2013).

> Although AR is related to virtual reality, it enhances a user's interaction with reality through a computer-generated environment. AR allows a user to continue to see and hear the surrounding world but with additional sights and sounds that are synchronized to the exact location relative to a user's three-dimensional (3-D) orientation to a geographic locale (p. 6).

Applications of AR in documentary storytelling and in relation to newspapers are pointed out by Pavlik & Bridges. The AR example given explains that

> a camera-equipped smartphone or tablet pointed at a newspaper or magazine can recognize a two-dimensional image and then recall and overlay a prerecorded video or 3-D object onto that image, potentially adding audio as well" (p.12).

If the idea of AR is applied to weather and weathercasting on-air, it is feasible to envision a viewer at home with a smart phone or tablet taking a picture or video of a live news weathercast and getting supplemental information (e.g., more detailed extended forecasts,

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custom local neighborhood weathercasts, specific follow-up information on the

weathercasters background, and amount of accuracy in forecasting). Historical facts,

connections and an array of various media materials (i.e., texts, photos, videos, 3D

graphs, and charts) could be made easily accessible to the viewer at home. These

additional forms of information augment the reality of the weather forecast and help set

the stage for future studies and research that explore and examine weathercasting

technologies.

Pavlik and Bridges (2013) point out that "AR is central to journalism in that it

serves the same essential function as news - it augments the user's experience with the

real-world, natural environment" (p.6). The researchers also note that "AR is poised to

transform the storytelling of twenty-first-century journalism in perhaps the same fashion

as photography of 150 years before" (p.15). While AR is still yet to come into full

fashion and at this moment has not been fully developed, it is important to highlight the

potential applications of these innovations especially in connection to weathercasting:

one of the most technologically advanced components of local television news.

Learning how to adapt to the rapidly changing digital technologies is essential to

avoiding obsolescence in the television news business. Weathercasters who learn how to

magnify their foci of knowledge as noted in the socio-technical model (see Figure 5.1

page 144) are able to traverse the difficulties and pressures presented.   Future studies that

incorporate the information gathered in the first informational interviews with the

weathercasters concerning expert learning, fluent retrieval, and adaptive expertise will

help construct a clearer picture of the weathercasters' behaviors. Additional studies

involving learning would also examine how the weathercaster excels in multiple contexts

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such as when they move from station to station or from remote location broadcasts to in studio broadcasts. Each of these working conditions involves change in the technology interacted with by the weathercaster or reporter as was pointed out by the use of the mobile backpack in chapter four. Understanding what can be done to better help weathercasters learn to use and integrate new digital technologies would be a pragmatic area for future studies. Learning how to become a weathercaster by the use of distance education methods and the application of andragogic theory (Knowles, 1990) is another area to focus on in future research and writing.

Limitations

The newsroom and weathercaster cultures explored and discussed in this dissertation are not representative of other television markets and are subjectively defined by the participants. The information obtained from the forty-nine interviews with the participants were done in a variety of settings ranging from face-to-face in studio and newsroom interviews to phone conversations and meetings with weathercasters in coffee shops and restaurants. While not fully controlled, efforts were made to have the weathercasters in relatively quiet, non-threating environments where they could freely express their feelings and thoughts on the questions presented in the interview schedule. The semi-structured interview format did allow for a variety of discussions about other topics to be explored but these additional topics and findings are not presented in this dissertation.

Another limitation comes from the critique that a culture is extremely complex and multifaceted and cannot be defined from a single case study. This dissertation

research attempts to construct a cultural framework for weathercasters and notes how it is unique and different from newsroom culture. The limitation lies in conflating newsroom culture with the weathercaster culture for the weathercaster is part of the newsroom culture and the weathercaster culture is labeled as a co-cultural one and not a mutually exclusive one. If it were mutually exclusive then logically the two propositions (newsroom culture is of one type and weathercaster culture is of another type) could not both be true and occur at the same time. Like a single coin toss that results in heads or tails, but not both, so too would be the definition of weathercaster culture if it were mutually exclusive. The current dissertation research, while attempting to differentiate newsroom culture from weathercaster culture, does not do so to the point of making it mutually exclusive.

Despite the limitations of this dissertation study, there are positive aspects in the findings and discussion to reiterate. The socio-technical environment of the local weathercasters studied is explicated and a greater understanding of autonomy, control, pressure, and the strategic coping mechanisms used by weathercasters are displayed. Co-cultural models add insight into the way influence operates in the newsroom, especially during severe weather. While only an initial exploration into the cultural dynamics of weathercasters, this study does find unique insights from professional local television weathercasters and reveals perceptions, behaviors, and actions that are not typically seen or known by viewers and researchers.

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APPENDIX A

INTERVIEW GUIDE

Interview Format (Semi-structured)

General areas and topics covered in formal recorded interviews are noted below

Interview One – Focused Life History
General weathercaster information
Expert learning
Expert fluent retrieval
Adaptive expertise
Multiple contexts
Five types of learning
Station education and policies
NWS & NOAA training
Vendor sponsored events/conferences
Seal of approval programs
Teaching/community outreach
Technology/digital weather information

Interview Two - Details of Experience
Activities at work
Routines
Schedules
Actions
Newsroom culture and relationships
Divisiveness/cohesion
Time constraints
Interactions with others in the newsroom
Story selection
Lead in stories
Cultural rituals
Monitoring the opposition
Weather warnings
Branding
Attribution - national and personal
Authority and dominance
Attraction and appeal - Stereotypes

Interview Three – Reflections and Characteristics
    Cultural Meanings
            Weathercaster culture
            Newsroom culture
    Routines and work
            Activities
            Behaviors
    Rituals and events
            Symbolic
            Sacred
    Humorous stories
            Funniest
            Bizarre
            Stress relief
    The best weathercaster
            Locally
            Nationally
    Emmys
            Local Emmy process
            Judging on a panel for Emmy
            Judging on a panel for seal for NWA or AMS
    Meteorologist versus weather personality
            Dual role
            Role playing
            Character versus being a character
            Positive and negative aspects
    List five dominant characteristics
            Success defined
            Perceptions of what is at the heart
    End of career
            Vision that others have
            Remembered for

APPENDIX B

PARTICIPANT INFORMATION LETTER

Dear Invited Weathercaster,

My name is Steven P. Garry and I am a PhD. candidate in the Walter Cronkite School of Journalism and Mass Communication. I am conducting a research project that will lead to information used for my PhD. dissertation. This research is an interdisciplinary project under the direction of ASU Walter Cronkite professors Dr. William B. Silcock, Dr. John E. Craft, Dr. Donald G. Godfrey, and Dr. Wilhelmina C. Savenye (Professor, Division of Educational Leadership and Innovation, Mary Lou Fulton Teachers College). In addition to being a PhD. candidate at ASU, I currently work as an instructor at the Arizona State University Polytechnic campus in the department of Interdisciplinary Humanities and Communication.

Currently, I am conducting a research study to examine television weather, an area that I have worked in and participated in professionally since 1994. In addition to my master's degree in Communication, I studied Geography and Meteorology in my undergraduate education and have been an AMS Seal approved meteorologist since 1999. I also hold the AMS Certified Broadcast Meteorologist CBM seal. I have also worked full-time as a broadcast television meteorologist in Arizona, California, Florida and Nevada for network affiliate television stations.

This project explores the culture of weathercasting and the use of technology in the television weather broadcasting world. Specifically, it examines weathercasters' role in using technology and the learning processes. It will also focus on weather culture in news and the current perceptions of weathercasters. It is being conducted in this geographic area because of the use of technology during severe weather such as during the Monsoon.

Meteorological certification or position at a station - chief, morning, weekend, etc. - is not a prerequisite for this study. This project is focused on learning and uses a constructivist approach – meaning that it needs your help and input to help find new knowledge. I appreciate your willingness to participate in this project. Your participation will involve interviews with me and allowing me some time to observe you in your working environment if possible. If that does not work for you or your station then interviews can be conducted off site or at a location of your choice.

- **Your participation is entirely voluntary and you can withdraw at any time.**
- **No identifying information will be gathered and your responses are confidential**.

I hope this research will help you better understand television weather broadcasting and weather information. Ultimately, this research may influence future weathercaster training and development. This could not be done without your assistance.

If you have any further questions or concerns, or would like to make additional comments before or after the study please contact me by e-mail at steven.garry@asu.edu. I would like to thank you in advance for being so generous with your time and your insights. If you have any questions about this research, you can contact the chair of my PhD. committee Dr. Bill Silcock at the ASU Walter Cronkite School of Journalism and Mass Communication at bsilcock@asu.edu .

Sincerely,

Steven P. Garry steven.garry@asu.edu
PhD Candidate – ASU Walter Cronkite School of Journalism and Mass Communication
ASU Instructor of Communication - Interdisciplinary Humanities and Communication
School of Letters and Sciences - Arizona State University

APPENDIX C

INFORMED CONSENT FORM

STUDY TITLE: WEATHERCASTERS IN THE DIGITAL WORLD: A QUALITATIVE STUDY OF TECHNOLOGY AND CULTURE IN LOCAL TELEVISION WEATHER

I am a PhD. graduate student under the direction of Professor Dr. B. William Silcock in the Walter Cronkite School of Journalism and Mass Communication at Arizona State University. I am conducting a research study on technology, learning, and culture in the television weather broadcasting world.

I am inviting your participation, which will involve interviews with me and allowing me time to observe you in your working environment. If that does not work for you or your station then interviews can be conducted off site or at a location of your choice. You have the right not to answer any question, and to stop participation at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. You must be 18 or older to participate in the study.

Responses to the interviews will be used to help future student weathercaster education, training and development. The benefit of your participation is that you will add to the weathercaster research field. There are no foreseeable risks or discomforts to your participation.

Your responses will be confidential. Your interview will be given a number.
The results of this study may be used in reports, presentations, or publications but your name will NOT be used.

I would like to audio record this interview. The interview will not be recorded without your permission. Please let me know if you do not want the interview to be recorded; you also can change your mind after the interview starts, just let me know.

If you have any questions concerning the research study, please contact the researchers at: Dr. B. William Silcock b.silcock@asu.edu or me Steven P. Garry steven.garry@asu.edu

If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.