

**AN ABSTRACT OF THE DISSERTATION  
FOR THE DEGREE DOCTOR OF PHILOSOPHY  
IN THE SCHOOL OF LIBRARY AND INFORMATION MANAGEMENT**

RHONDA WESSEL ATKINSON

Presented on November 8, 2012

Title: The Greensburg 2007 Tornado Crisis: Extension Agents Make Sense of  
Informational Needs, Information Seeking Behaviors and Information Satisfaction

Abstract Approved: \_\_\_\_\_

(Chair)

This study investigates the informational needs, information seeking behavior, and information satisfaction of two Kansas State Research and Extension agents as they experienced the 2007 tornado that destroyed Greensburg, Kansas and its aftermath. Extension agents were interviewed and areas of cognitive dissonance were noted as agents made sense of the tornado crisis. A description-rich narrative shares their experiences before, during and after the crisis. Data from the interviews transcripts, field notes and documents were coded at two levels: the four crisis intervals (prodromal, acute, chronic and resolution) and look-think-act categories for personal, family, employee and community responses. As the agents tell their story of helping to rebuild the Greensburg community, a picture emerges of what information was needed, where the information was found, the value or lack of value of the information, and what information was needed but never obtained.

**PERMISSION TO COPY STATEMENT**

I, Rhonda Wessel Atkinson, hereby submit this dissertation to Emporia State University as partial fulfillment of the requirements for a doctoral degree. I agree that the Library of the University may make it available for use in accordance with its regulations governing materials of this type. I further agree that quoting, photocopying, or other reproduction of this document is allowed for private study, scholarship (including teaching) and research purposes of a nonprofit nature. No copying which involves potential financial gain will be allowed without written permission of the author. I also agree to permit the Graduate School at Emporia State University to digitize and place this dissertation in the ESU institutional repository.

---

Signature of Author

---

Date

THE GREENSBURG 2007 TORNADO CRISIS:

EXTENSION AGENTS MAKE SENSE OF INFORMATIONAL NEEDS,  
INFORMATION SEEKING BEHAVIORS AND INFORMATION SATISFACTION

Title of Dissertation

---

Signature of Graduate School Staff

---

Date Received

THE GREENSBURG 2007 TORNADO CRISIS:  
EXTENSION AGENTS MAKE SENSE OF INFORMATIONAL NEEDS,  
INFORMATION SEEKING BEHAVIORS AND INFORMATION SATISFACTION

by

Rhonda Wessel Atkinson

Emporia State University

November 8, 2012

---

A Dissertation

Presented to

EMPORIA STATE UNIVERSITY

---

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

The School of Library and Information Management

TABLE OF CONTENTS

TABLE OF CONTENTS..... III

LIST OF TABLES ..... VII

LIST OF FIGURES ..... VIII

CHAPTER 1: INTRODUCTION TO THE STUDY ..... 1

    BACKGROUND OF THE PROBLEM ..... 2

        Greensburg: Its Geography, Town Structure, and People ..... 3

        Kansas State Research and Extension..... 4

    UNITED STATES COOPERATIVE RESEARCH AND EXTENSION SERVICE ..... 5

        Organizational History ..... 6

        Mission..... 8

        The Kansas Cooperative Research and Extension Program ..... 9

        Service Problem Areas..... 12

    STATEMENT OF THE PROBLEM ..... 13

        United States Tornado Region: Central Kansas..... 13

        The Climatology of the Greensburg Tornado ..... 16

        North American Disasters and Crisis Management..... 18

    PURPOSE OF THE STUDY ..... 23

    RESEARCH QUESTIONS ..... 23

    THEORETICAL FRAMEWORK ..... 24

    REARCH STRATEGIES ..... 25

SIGNIFICANCE OF THE STUDY .....	26
STUDY LIMITATIONS .....	26
DEFINITION OF TERMS .....	27
CHAPTER 2: REVIEW OF THE LITERATURE .....	30
INFORMATION NEEDS AND INFORMATION SEEKING .....	30
WEICK'S SENSEMAKING APPROACH .....	33
Improvisation .....	35
High Reliability Performance .....	36
Continuous Change .....	37
CRISIS COMMUNICATION .....	40
THE ROLE OF THE ORGANIZATION IN CRISIS MANAGEMENT .....	43
Hardiness .....	47
Self-Enhancement .....	47
Repressive Coping .....	47
Positive Emotion and Laughter .....	48
CHAPTER 3: METHODOLOGY .....	63
NATURE OF QUALITATIVE RESEARCH .....	63
RESEARCH DESIGN .....	65
RESEARCH SITE AND SAMPLING .....	66
STUDY PARTICIPANTS .....	67
PROTECTION OF HUMAN SUBJECTS AND CONFIDENTIALITY .....	68

DATA COLLECTION .....	68
Participant Interviews .....	69
Observational Field Notes.....	69
Review of Archival Sources .....	70
DATA CODING.....	72
DATA ANALYSIS.....	72
CHAPTER 4: RESEARCH RESULTS .....	75
AGENT A PRODROMAL CRISIS .....	75
Agent A-Personal.....	75
Agent A-Family .....	75
Agent A-Employee .....	76
Agent A-Community .....	77
AGENT A ACUTE CRISIS .....	78
Agent A-Personal.....	78
Agent A-Family .....	79
Agent A-Employee .....	80
Agent A-Community .....	81
AGENT A CHRONIC CRISIS.....	82
Agent A-Personal.....	82
Agent A-Family .....	83
Agent A-Employee .....	84
Agent A-Community .....	91

AGENT A CRISIS RESOLUTION.....	92
Agent A-Personal.....	92
Agent A-Family .....	92
Agent A-Employee .....	92
Agent A-Community .....	93
AGENT B PRODRIMAL CRISIS.....	94
Agent B-Personal .....	94
Agent B-Family .....	95
Agent B-Employee.....	95
Agent B-Community.....	97
AGENT B ACUTE CRISIS .....	98
Agent B-Personal .....	98
Agent B-Family .....	98
Agent B-Employee.....	100
Agent B-Community.....	101
AGENT B CHRONIC CRISIS.....	110
Agent B-Personal .....	110
Agent B-Family .....	110
Agent B-Employee.....	110
Agent B-Community.....	112
AGENT B CRISIS RESOLUTION.....	114
Agent B-Personal .....	114
Agent B-Family .....	115

Agent B-Employee.....	117
Agent B-Community.....	118
CHAPTER 5: SUMMARY AND ANALYSIS .....	123
REFERENCES .....	141
APPENDIX.....	151



## LIST OF TABLES

### TABLE

1	WORST KANSAS TORNADOES: 1950-DECEMBER 2007.....	15
2	NATIONAL RESPONSE FRAMEWORK .....	58-60

LIST OF FIGURES

FIGURE

1. USDA (2011) 1862 INSTITUTIONS WITH EXPERIMENT STATIONS..... 7

2. KANSAS COUNTY EXTENSION COUNCIL AND EXTENSION BOARD  
STRUCTURE ..... 11

3. 250 MB CHART ..... 17

4. STRINGER (1999) LOOK, THINK, ACT PROCESS OF SENSEMAKING..... 39

5. FINK’S (1986) CRISIS CYCLE ..... 42

6. INTERVIEW SPIRAL OF KSRE AGENTS’ MULTIPLE POINTS OF  
VIEW ..... 71

7. DATA ANALYSIS DESIGN STRUCTURE..... 73

8. AGENT SENSEMAKING ..... 132

## CHAPTER 1

This study examines the information Kansas State Research and Extension (KSRE) aka “Extension” can glean from the experiences of the surviving Greensburg residents who rebuilt their individual lives as well as their shared community following the 2007 tornado. By learning from this crisis event, KSRE can better prepare agents to respond to future crises and support their efforts to empower community members to live happier, healthier, and easier lives.

In this case study, Extension agents were interviewed to determine how they made sense of their situation. Informational needs, information-seeking behavior, and information satisfaction were explored. As the research project progressed it became clear that Extension uses many acronyms, and those used in this document are included in the appendix along with a list of definitions. The data gleaned from the interviews, observational field notes, and archival sources were analyzed first to find the areas of cognitive dissonance and then sorted into four categories: (a) what information was needed, (b) where the information was found, (c) the value or lack of value of the information, and (d) what information was needed but never obtained. Next, the data was reanalyzed to determine what action was taken by the study participants from the information gathered and (a) whether that action was what the participant would presently perform if placed in the same situation or (b) whether the participants would make the same decisions if they had had different information available to them at the time of taking action.

## **Background of the Problem**

With winds up to 300 miles per hour and a width of 1.7 miles, a tornado destroyed Greensburg, Kansas in a matter of minutes on May 4, 2007. Ninety-five percent of the town was completely destroyed with the remaining five percent of the town sustaining significant damage. Of 1,300 homes, 961 were completely destroyed. Of the homes left standing after the tornado, 105 incurred major damage; 67 homes had minor damage, and 11 homes had slight damage (Haney, 2008). Eleven people lost their lives as a result of the tornado, and the 1,500 residents who survived found that their lives were suddenly twisted in a spiral of challenge and change. In an instant, all was lost. Water, electricity and gas utilities were no longer available. The local hospital was destroyed.

Communication systems were not functioning. Buildings were missing, including the bank, library, grocery store, and pharmacy. Empty houses and cozy homes were gone. Those residents of Greensburg who were fortunate enough to have emerged from the debris possessed only their own knowledge and experiences as well as that of their neighbors to rely on to make sense of their immediate situation.

From the eve of the Greensburg tornado on May 4, 2007 to the present day, the people of Greensburg, including the two KSRE agents who are the participants of this study, experienced cognitive dissonance as the rebuilding of the community progressed. During cognitive dissonance, people struggle to establish equilibrium between their thoughts, about their circumstances, and the actual reality of their situation. In other words, they try to make sense of what is happening to them and around them (Weick, 2001).

When people are under stress, they need larger quantities of rich information required to establish equilibrium. “Information richness is defined as the ability of information to change understanding within a time interval” (Weick, 2001, p. 10). The rich information must be quickly interpreted; therefore, it must be presented in a simple format that is clear and concise. In the absence of information or in the presence of confusing information, individuals will revert to their prior experiences and existing knowledge. Response time to the disaster was critical, but access to information was limited for Greensburg residents during a stressful period when they required rich information that was presented in a concise and clear manner.

**Greensburg: Its geography, town structure, and people.** Greensburg was founded in 1886 and is the county seat in Kiowa County (named after the Kiowa Indians). The town was named after D. R. Green who was a stagecoach driver reported to have ejected Carrie Nation from his stage after she took a cigar from his mouth and threw it away. The first speeding ticket for an automobile was issued on October 23, 1911 for exceeding the speed limit of 10 miles per hour. The county covers 723 square miles. Other towns in the county include Belvidere, Brenham, Haviland, Joy, Mullinville, and Wellsford (Greensburg Chamber of Commerce, 2008).

The 2000 census (U.S. Census Bureau, 2008) showed there were 1,574 people living in Greensburg, which comprised 730 households and 453 families. The racial makeup was 97.01% White, .83% Native American, .06% Asian, and 1.02% from other races. Of the 730 households, 23.8% had children under the age of 18 living at home and 53.3% were married couples living together. The average household size was 2.14 and the average family size was 2.76. The median age of the population was 46. For every 100

females 18 and older, there were 88.1 males. The median income for a household in the city was \$28,438, and the median income for a family was \$39,188. Males had a median income of \$28,426 in contrast to \$20,875 for females. The per capita income for the city was \$18,054. This means that about 8.4% of families and 12.4% of the population were below the poverty line, including 16.6% ages 18 and under and eight percent for those 65 and older.

Religion plays an important role in the lives of those in Kiowa County, and the congregations that were unharmed by the Greensburg tornado played a vital role in the relief efforts. There were 14 Kiowa County churches prior to the tornado: American Baptist, Assemblies of God, Bahai, Catholic Church, Disciples of Christ, Church of God in Christ Mennonite Church, Churches of Christ, Friends Quaker Church, Lutheran Church, and Mennonite Church USA (Association of Religion Data Archives, n.d.).

**Kansas State Research and Extension.** “The Chinese symbol for the word ‘crisis’—called wei-ji—is actually a combination of two words, ‘danger’ and ‘opportunity’” (Fink, 1989, p.1). This study focused on the opportunity the crisis can provide KSRE to learn from the experiences of the surviving Greensburg residents who rebuilt their individual lives as well as their shared community following the 2007 tornado. By learning from this crisis event, KSRE can better prepare agents to respond to future crisis situations and support their efforts to empower community members to live happier, healthier, and easier lives.

Information access was critical to the surviving residents as they made sense of their situation and formulated strategies for rebuilding. The informational needs of Greensburg residents changed over time. The survivors’ information needs during the

immediate days following the tornado differed from the information needs weeks, months, and even a year after the disaster, as they progressed from the survival phase to the rebuilding phase of their lives. During the phases of survival and rebuilding, residents were engaged in a spiral of denial, deliberation, and decision-making processes (Ripley, 2008). This spiraling process was experienced at several levels: personal, family, employer-employee, and community.

There are countless and varied lessons that can be learned from each tornado survivor; however, this study limited its inquiry to the two KSRE agents who were working in Greensburg during and after the tornado. These KSRE agents were trained to deliver research-based information from Kansas State University to the residents of Kiowa County. KSRE agents study the people and the problems of the communities they serve. They strive to fully understand the problems that need to be addressed and clearly articulate them. Based upon their analysis, the agents built an action plan aimed at helping the community members resolve the problems (Buchholz, 2008).

Extension agents are often referred to as change agents because they lead a community or group toward positive changes in particular situations (Rogers, 1995). In the case of a natural disaster, such as the one experienced in Greensburg, it is important to understand what information the KSRE agents require, personally and professionally, to guide a community process when the external and internal landscapes of residents' lives have undergone major changes.

### **United States Cooperative Research and Extension Service**

A full understanding of the U.S. Cooperative Research and Extension Service (USCREES) program is needed in order to understand how it serves communities in general

as well as the Greensburg community in particular. The following review of its history and mission includes the program's problem service areas, and specifics of the program.

**Organizational History.** The Smith-Lever Act of 1914 officially created the USCREs, but prior pieces of legislation played an important role in creating the program. In 1862, Congress passed the Morrill Act that provided a grant of land for every state to agricultural practices. This Act was followed by the passing of federal legislation, The Morrill Act of 1890, that provided annual appropriations to support agriculture and other areas of instruction (Scott, 1970).

In the early years, land-grant colleges struggled. Professors found it difficult to find new and innovative agricultural practices to teach, and they were not successful in extending their teaching to agricultural producers (Rasmussen, 1989). The Hatch Act of 1887 was passed to address these issues with appropriated funds designated to establish agricultural experiment stations fashioned after stations in Great Britain and Germany (Williams, 1991). The Hatch Act was successful in helping develop knowledge that was useful to agricultural producers; however, the 1862 institutions with experiment stations started testing ways to extend their reach to the agricultural communities they were designed to serve (Eddy, 1957) (see Figure 1). Bulletins, correspondence courses, and traveling short courses were early delivery modes of information made available to farmers.

The delivery model that has stood the test of time began with a program in the southern U.S., called the Farmers' Cooperative Demonstration Work. Seaman Knapp was hired by the United States Department of Agriculture (USDA) to guide the program.



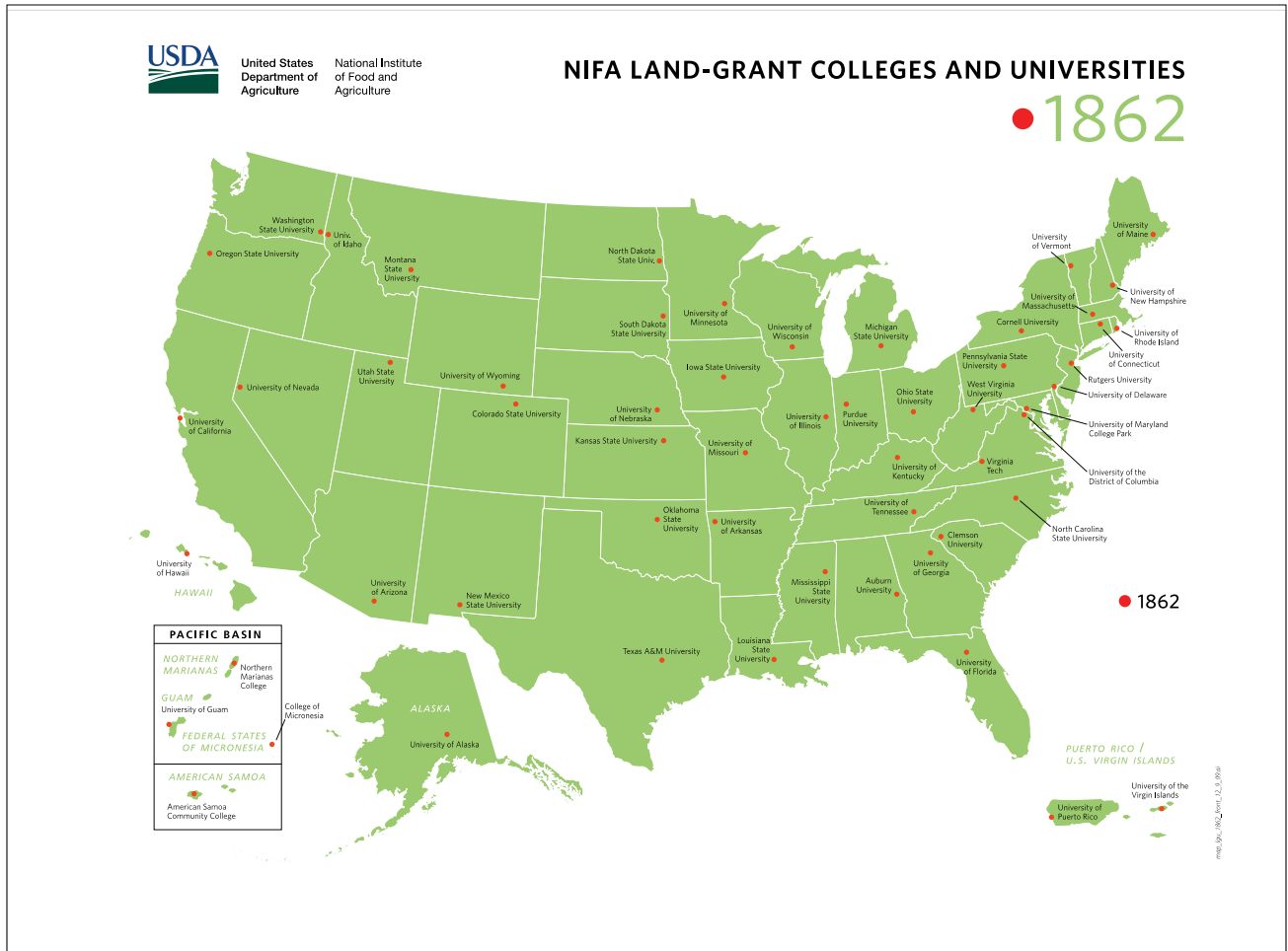


Figure 1. USDA (2011) 1862 institutions with experiment stations

The program's aim was to modernize farming practices in the south where farmers were struggling to succeed. The first trial of this approach was conducted in Terrell, Texas in 1903 where Knapp worked with the community to select a farm and insure the farmer against potential loss. The farmers then ran a demonstration farm with the new farming practices recommended by the university.

Knapp created a grassroots cooperative that was highly successful, and he hired demonstration agents to visit the enrolled farmers to check on their progress. By the end of just one year, 24 demonstration agents were working in three states and 7,000 farmers were signed up as demonstrators (Scott, 1970). Agents visited 10-20 counties monthly and traveled extensively, leading Knapp to think it would be more effective to have agents concentrate in a one-county area. He convinced local communities to provide a portion of their agent's salary to enable the adoption of a system of single county agents that is still the most prevalent model in Extension today (Scott, 1970). This is the Extension system that exists in Kiowa County, Kansas.

**Mission.** The mission of the USCREs is to extend research-based information from the university setting to the communities served. This extension occurs through the core programs of agriculture, family and consumer sciences, and youth development (4-H). However, as constituent needs change, new program areas have been added. In 1955, the Smith Lever Act was modified to include rural economic development, and it was changed again in 1985 to include rural energy use (Rasmussen, 1989). While the USCREs started as a predominately rural organization, today more urban needs are being addressed, such as horticulture and the Expanded Food and Nutrition Education Program (EFNEP) that provides nutrition education to low-income families.

The partners working together for the USCRES include the county/state Cooperative Extension Service, USDA, and a special branch of the USDA, the Cooperative State Research, Education and Extension Service (CSREES). The CSREES is responsible for distributing the Smith-Lever funds to each state's land-grant system. The funds are allocated based on a formula authorized by congress according to the number of farms and rural population (McDowell, 2001).

Land-grant universities provide required data and reports to the USDA; however, these universities have considerable freedom in determining the direction of Extension for the constituents to be served. Each university's dean of agriculture is typically given the Extension responsibility. Research is conducted on the university campus through the agricultural experiment station, and results are shared with county agents. Funding is shared among the partners. Local Extension boards request funds from county commissioners; the university requests funds from the state legislature and the USDA/CSREES provide the remaining funding. The funding percentages paid by each entity have fluctuated over the years, but trends indicate that funding is diminishing from the USDA/CSREES as well as the state (McDowell, 2001).

**The Kansas Cooperative Research and Extension Program.** Since its inception, KSRE has functioned as a "we the people" grassroots program. This grassroots foundation is the program's greatest strength just as Seaman Knapp demonstrated in the early years of establishing single county agents. Program support for 4-H is provided by the USDA and KSRE located at Kansas State University. The infrastructure of the KSRE, with offices located in all 105 Kansas counties, provides access to the program for all.

At the local level, an Extension board made up of elected leaders within the

county governs each county Extension program. Extension boards have significant responsibilities for budget, personnel, programs, and management. Kansas Extension Council and Kansas Extension District laws, as well as KSRE policies, provide the legal and operational framework for managing local Extension programs. County Extension Council members (see Figure 2) support the Extension program, promote community involvement, help agents locate demonstration sites, encourage residents to attend public meetings, and recruit people to assist in Extension program planning (Cholick, 2008).

Each Extension Council member serves on one of four program development committees: Agriculture and Natural Resources, Family and Consumer Sciences, 4-H Youth Development, and Community Development. They also work cooperatively to plan, implement, and evaluate a unified educational program for the county (Cholick, 2008). With this organizational structure, the Extension Council and the program development committee implement the dissemination of information to county constituents.

The Kiowa County Extension agents work with each of the four program committees and report to the Kiowa County Extension Board. An area Extension director in the Southwest Kansas area Extension office located in Garden City, Kansas, serves as the liaison between the local agents, the county board, and the KSRE administration.

## County Extension Leadership Structure

### Extension Council

Composed of 24 Members who each represent  
one of the four Program Development Committees below:

4-H Youth Development  
Community Development  
Agriculture and Natural Resources  
Family and Consumer Sciences

### Extension Board

Composed of nine members elected by the Extension Council  
from its own members, consisting of a chair, vice chair,  
secretary, treasurer and five other members.

*Figure 2.* Kansas county Extension Council and Extension board structure

**Service Problem Areas.** The core mission themes guiding the work of KSRE include the following: “(a) healthy communities: youth, adults, and families; (b) safe food and human nutrition economic development through value-added products; (c) natural resources and environmental management; and (d) competitive agricultural systems” (Cholick, 2005, p. 3). According to Cholick, “the intended outcomes of the programs cover several areas:

- healthy eating and physical activity,
- healthy sustainable communities,
- positive child, youth,
- and family development,
- positive adult quality of life,
- new and enhanced products from agriculture,
- conservation of soil, water, and energy,
- improved quality of land, air, and water,
- efficient and sustainable cropping and horticultural systems,
- efficient and sustainable animal production systems,
- farm and food systems management, safe, secure,
- high-quality food supply, and
- enhanced nutritional quality of the food supply.”

A continual issue for KSRE is to measure and share the effectiveness of the core mission themes and the long-term outcomes to satisfy questions legislators and county

commissioners have about how well the Extension knows and serves its customers. A stakeholder assessment of the efficiency and effectiveness of Extension delivery was conducted in 1996. Among the issues that surfaced in the study germane to this research project was that the organization responds too slowly to issues and personal interface with the local Extension agent is valued (Wootton, 1996).

### **Statement of the Problem**

Cartwright, Case, Gallagher, and Hathaway (2002) explained “the history of Extension is about helping people by providing objective information” (para 1). To achieve the goal of providing objective information, Extension services in each state develop programs specific to the needs of the local communities served. The National Climatic Data Center (2008) identified two regions within the U.S. that experience a “disproportionately high frequency of tornadoes” (para 4). Florida is one region, and what is referred to as “Tornado Alley” represents the second region. The boundaries of Tornado Alley are debated among meteorologists, depending upon the criteria used (i.e., frequency or intensity). Generally, Central Kansas lies within most descriptive boundaries of the United States tornado region. Therefore, it is appropriate for KSRE to be prepared to respond to residents’ need for information during a tornado.

**United States tornado region: Central Kansas.** The United States has approximately 1,000 tornadoes a year, which is more than any other country in the world. This is due to the geography of the U.S. where cold air from Canada, warm air from the Gulf of Mexico, and dry air from the southwest clash in the middle of the country, causing thunderstorms that can result in tornadoes (Edwards, 2008). Thunderstorms can spawn a singular tornado or several at a time; the width, direction of travel, and speed can vary.

Tornadoes can touch down for a few seconds or remain on the ground for long periods of time. The Greensburg tornado remained on the ground for 22 minutes (Unruh, 2007).

Records have been kept since 1950 on tornadoes occurring in Kansas (Wichita Eagle, 2009); from that year until December 2007, 3,488 tornadoes have been recorded. Prior to 2007, tornadoes were measured on the Fujita-Pearson scale that was F1-F5. Tornadoes today are measured on the Enhanced Fujita Scale. The new scale aligns wind speeds more closely with the damage caused. Minimal damage is ranked as an EF1 tornado, and an EF5 tornado levels nearly all structures. Mary Knapp, climatologist for the state of Kansas as well the state Extension climatologist at Kansas University, reported, “In all, 217 people have died due to Kansas twisters, and although most have perished in violent F5 storms, even the less intimidating F1— now classified as EF1— tornadoes have claimed lives” (Associated Press, 2008a, para 3). The total injuries for this recorded time period are 2,699, and property damage is estimated at more than \$1.9 billion. This estimate is most likely low, as not all damage such as fencing and other rural infrastructure, is reported (see Table 1).

The tornado that destroyed Greensburg in Kiowa County in 1955 was almost identical to the tornado that destroyed the town of Udall, Kansas in Cowley County, and is ranked as the most deadly in Kansas’ history (Associated Press, 2008b). Mike Smith, founder and chief executive officer of the Wichita-based private forecasting service WeatherData Inc., explained, “From the research I’ve done, Greensburg and Udall are



Table 1  
*Worst Kansas Tornadoes: 1950–December 2007*

Rank/KS County	Date	Time	Magnitude	Deaths	Injuries
1. Cowley	May 25, 1955	10:45 p.m.	F5	75	270
2. Shawnee	June 8, 1966	7 p.m.	F5	16	450
3. Osage	June 17, 1978	6:15 p.m.	F1	16	3
4. Butler	June 10, 1958	5:45 p.m.	F4	15	5
5. Butler	April 26, 1991	5:40 p.m.	F5	11	63
6. Kiowa	May 4, 2007	8:03 p.m.	F5	11	63
7. Lyon	June 8, 1974	6 p.m.	F4	6	177
8. Sedgwick	May 3, 1999	7:30 p.m.	F4	6	150
9. Trego	June 27, 1951	10 a.m.	F4	5	100
10. Sumner	May 25, 1955	10:15 p.m.	F5	5	3
11. Sedgwick	April 26, 1991	4:57 p.m.	F5	4	75
12. Miami	May 20, 1957	7 p.m.	F5	4	20
13. Crawford	May 4, 2003	3:35 p.m.	F4	3	20

Source: Associated Press. (2008, June 20). *Damage Done: The Worst Tornadoes*. *Topeka Capitol Journal* [Electronic version].

probably the most comparable tornadoes that I've come across. They are so alike they are almost twins" (Associated Press, 2008b p. 1). Each tornado was measured as an EF5 with winds exceeding 200 miles per hour, and both storms destroyed 95 percent of the town. Both traveled north instead of the more typical southwest to northeast direction. Both tornadoes were difficult to see because of hard rain and hail (Associated Press, 2008b).

**The Climatology of the Greensburg Tornado.** For the purpose of this study, it is important to understand the meteorological set-up that was conducive to the Greensburg super-cell thunderstorm, which had a long-lived rotating updraft that cyclically produced a strong and violent tornado. At 8:45 p.m., the storm prediction center in Norman, Oklahoma issued tornado watch 227 for much of southern Kansas, northwest Oklahoma, and the eastern panhandle of Texas (Monfredo, 2008). The 500 mbar chart, a chart that represents the pressure level in about the middle of the atmosphere, showed a large trough pushing through the western half of the United States (Haby, 2008). The map showed pronounced spreading that indicated a diffluent wind flow over western and central Kansas (see Figure 3). A look at the 250 mbar contours, nearer the earth's surface, showed the same results (Monfredo, 2008). This was a highly unstable situation. A strengthening, low-pressure system near and along the western Kansas border helped create gusty, southeast (backed) surface winds that enhanced the wind shear favorable for tornadoes.

The Kansas National Weather Service Dodge City office issued a tornado warning at 0200 UTC for Kiowa County, including the city of Greensburg, and "forecasters based their decision on mid-level thunderstorm-rotation, a 'mesocyclone' as



remotely sensed by the DDC Doppler radar, and its one-half-degree tilt skyward” (Monfredo, 2008, p. 117). Twelve minutes later, the office issued an emergency-situation statement of a large tornado slowly moving north-northeast. The tornado was large, wedge-shaped, and very dangerous. It struck Greensburg at 8:03 p.m.

**North American Disasters and Crisis Management.** The number and cost of natural disasters in North America have increased since 1950, and the United States National Aeronautics and Space Agency reported that natural disasters are increasing in frequency and severity (Riebeek, 2005). With the increased frequency of natural disasters, organizations are challenged to respond with greater efficiency and effectiveness. When a natural disaster occurs, organizations focus on specific actions that can mitigate the disruption and return to functionality as quickly as possible (Junglas & Ives, 2007). These organizations’ employees may be impacted by the disaster as well as their employers’ actions. Organizations that have disaster management procedures in place recover two and a half times faster after a disaster than those that do not have such procedures. A crisis management plan, however, is only as good as the people and systems that support it (Fink, 1986). “It’s not just about having the right tools and technology—you need the right people in the right place to implement and operate them” (Warren, 2004, p. 44). In the case of land grant universities or any organization with staff in the field, it is critical that the information is disseminated to the field staff before, not after, a crisis occurs (Fink, 1986).

Louisiana Cooperative Extension Service (LCES) found that the Extension model of working in collaboration with many local and state agencies, organizations and entities contributed to the effectiveness of LCES's hurricane response. These relationships

allowed Extension to provide a multi-layered, multi-faceted response in addressing critical human and community needs. Additionally, agents and campus specialists established new connections with unfamiliar groups and leaders that allowed LCES to accomplish more for Louisianans (Cathey, Coreil, Schexnayder, & White, 2011).

Extension's mission—to provide research-based, relevant information to improve lives—works well in times of tranquility and disaster. In a disaster, the reaction and implementation time is faster, and agents must often make decisions without assurances that normally exist. Following the hurricanes, after personnel made sure their families were safe, Extension administration authorized them to re-enter the disaster zone to begin implementing response and recovery efforts. Facing a disaster of this magnitude taught them invaluable lessons that could help other Extension services when facing disasters. Providing information to people in crisis can help them learn and move forward as they pick up the pieces (Cathey, et al., 2011). The other organization lessons they learned included:

1. Have a plan to account for personnel in times of disaster.
2. Be prepared to print publications (or have inventory) that can meet immediate needs post-disaster.
3. Be prepared to lose communication technology: have contingency plans, use satellite phone technology, and bring in mobile Internet connectivity that can run on generated power.
4. Have emergency fuel stocks in place for travel and portable generator power needed to re-establish connectivity in disaster areas.
5. Have a list of emergency contact information available for all personnel.

6. Have an emergency housing and business re-establishment plan.
7. Be prepared to set up emergency livestock rescue operations.
8. Be prepared to deal with animal carcass disposal.
9. Be prepared to deal with rescued companion animals (primarily cats and dogs) following a flood event.
10. Have a pre-established volunteer management plan in place.
11. Have in place a plan to accept, manage, and fairly allocate donations.
12. Be prepared to put in place a system for accepting and fairly allocating internal organizational financial donations.
13. Be patient, and be prepared to take risks and empower employees to get the job done on the ground with minimal interference--but with willingness and offer to help in any way necessary.
14. Collaborate with other entities for disaster management, considering how the organizations should work together for maximum assistance.
15. Recognize that disasters can provide a valuable “teachable moment.” (Cathey, et. al, 2011, p. 4).

In 1993, the creation of the Extension Disaster Education Network (EDEN) was a direct result of the lessons learned by Extension in responding to the catastrophic Mississippi and Missouri river floods. Officials found that long-term community recovery efforts rested with local government, the faith community, and Extension. These groups were in the communities long after the water receded and the disaster was no longer national news. They also discovered that citizens looked to Extension for disaster resources and expertise, but individual state Extension programs lacked the capacity,

research-based information or expertise to address the issues/needs resulting from such a major disaster (EDEN, 2011).

It was also noted by the emergency management community that Extension could be a tremendous asset. Extension could play a vital role related to emergency management, but the Extension faculty was not technically prepared to play that role. Extension professionals observed a need for more coordination and standardization of recovery recommendations by the various emergency response agencies, and that the impacted states lacked the capacity and resources to deal effectively with the magnitude of requests for information, expertise, recommendations, technical assistance, community planning, and recovery issues (EDEN, 2011). Based on these lessons, it was obvious that the land-grant system would have an ongoing expectation to be involved locally and nationally in the emergency management arena. A.J. Dye of the USDA asked Peter Bloome, University of Illinois; Jerry DeWitt, Iowa State University; and David Baker, University of Missouri, to develop a proposal to build on the lessons learned and to position the Midwest region to more effectively prepare for and respond to future disasters. The three leaders initially envisioned that one or more centers would be established in the North Central Region (NCR) where states could pool their technical and educational resources to more effectively respond in times of a disaster (EDEN, 2011).

During the 1993 disaster, the states shared some important human resources, but they thought they could do better. DeWitt submitted a multi-state proposal for \$80,000 to CSREES. The NCR Extension directors were asked to designate one representative per state to serve on a regional committee and to attend a fall 1995 meeting in Kansas City. The main issues that surfaced during that meeting were the following:

1. How can we share the resources we already have that apply to disasters?
2. What resources are available or missing that would be used by the North Central states in the types of disasters that we typically experience?
3. How can we provide training to Extension staff members in emergency management?
4. How can we promote scholarly research and efforts that would support this area if Extension were to play a role in it?
5. Where can we go to find funds that might support these efforts? (EDEN, 2011, p. 12)

At a second meeting in Kansas City in May 1996, the representatives brought more ideas for collaboration. On the last day, participants agreed the “disaster reduction group” needed a name. The key driving principle was development of a network among the 12 NCR states to respond as a region to future disasters. Four words described that vision: Extension Disaster Education Network (EDEN). The first meeting of EDEN was in Minneapolis during the fall of 1996. Funding by CSREES allowed EDEN to support EDEN coordination and communications, Web development and maintenance, curriculum development, training, and resources development (EDEN, 2011). Crisis management has become a growing issue for colleges and universities and their outreach facilities and programs (Siegel, 1994). The need for studying how colleges and universities prepare for, function, respond, and organizationally restructure in the face of natural disasters is vital (Piotrowski & Vodanovich, 2009). In a study of Hurricane Katrina, Dolan (2006) reported that most colleges and universities were not prepared to handle the crisis of a natural disaster. Richardson (1993) suggested that the use of case studies might foster an



understanding of crisis management. Because the Greensburg tornado was an isolated natural disaster and the Extension Service is a microcosm of organizational and university life, a case study of the lived experiences of the KSRE agents who lived and worked in Greensburg, Kansas during and after the tornado of May 4, 2007 should provide insight into how KSRE could better manage future crises.

The two KSRE agents in Greensburg did not have a crisis plan that clearly defined the type of information their constituents would require during a natural disaster of the proportion they encountered. Moreover, these KSRE agents had not been formally trained on how to deal with the effects of simultaneous disruption in their personal and professional lives. These agents sought assistance from other KSRE co-workers and administrators who possessed the same level of training and preparedness.

### **Purpose of the Study**

The purpose of this qualitative case study is to explore how two Kansas Cooperative Research and Extension (KSRE) agents in Kiowa County made sense of information available to them during a time period that began the night of the Greensburg, Kansas tornado on May 4, 2007, and stretched through the post-disaster community rebuilding process currently underway. The personal circumstances of the KSRE agents are examined because these circumstances and the agents' response to them influenced their professional behavior. The focus of the study is on how the KSRE agents were impacted professionally as agents responsible for providing community members with objective information during and in the aftermath of a tornado.

## **Research Questions**

The overarching research question of this study is the following: What is an effective information transfer role for KSRE agents and administrators to perform in the aftermath of a crisis? Six additional research questions also provide guidance for this study:

- What information did the KSRE agents require and how did they acquire it?
- What was the quality or richness of the information acquired?
- Was any of the required information made available to the KSRE agents prior to the Greensburg tornado?
- At what time during or after the disaster did the agents experience moments of cognitive dissonance?
- How did the agents regain balance between thought and action during times of cognitive dissonance?
- What part did KSRE coworkers and administrators play in assisting agents with their needs?

## **Theoretical Framework**

The theoretical framework undergirding this study is Weick's (2001) information systems theory, specifically the process of sensemaking. Weick further described the nature of organized sensemaking:

Organizational sensemaking is first and foremost about the question: How does something come to be an event for organizational members? Second, sensemaking is about the questions: What does an event mean? In the context of everyday life, when people confront something unintelligible and ask "what's the story here?"

their question has the force of bringing an event into existence. When people then ask “now what should I do?” this added question has the force of bringing meaning into existence, meaning that they hope is stable enough for them to act into the future, continue to act, and to have the sense that they remain in touch with the continuing flow of experience. (p. 410)

The organizational approach to sensemaking described by Weick et al. (2005) provides a framework for understanding how the KSRE agents made sense of the information available to them from the initial moments the Greensburg tornado struck throughout the community rebuilding process. Three aspects of Weick’s (2001) sensemaking theoretical model are used to examine the experiences of the Greensburg KSRE agents’ tornado and post-tornado experiences: (1) improvisation, (2) high reliability performance, and (3) continuous change. These aspects are described in detail later.

### **Research Strategies**

This qualitative study employed the single-case-study research design. Case study research involves inquiring about a particular issue, or phenomenon, through one or more cases within a bounded system (Creswell, Merriam, 2002). Purposeful sampling, using a critical sampling strategy (Creswell, 2007), was used to select study participants, two KSRE agents and others, who could best contribute to an understanding of how they made sense of the information available to them from the night of the Greensburg, Kansas tornado on May 4, 2007 through the first four years of the post-disaster community rebuilding process. Snowball sampling was then used to allow the researcher to explore the avenues the agents used to acquire critical information. The other KSRE co-workers

and administrators the study participants called upon for assistance and how well prepared those employees were to assist were of special interest.

### **Significance of the Study**

Tornadoes the magnitude of the Greensburg tornado are rare, and seldom is an entire town demolished (Haney, 2008). When such a catastrophic event does occur, it is critical to examine the necessary emergency response and rebuilding processes that were well executed and managed as well as those processes that require improvement (Ripley, 2008). This study of the KSRE agents' responses to the destruction of the town of Greensburg can contribute to the understanding of information needs during emergency responses to national disasters.

### **Study Limitations**

Limitations are potential weaknesses that can affect a study's results (Creswell, 2005). The first limitation inherent to this study is the purposeful sample that is limited to two KSRE agents. Qualitative researchers typically limit their study to a few individuals or cases in order to attain information-rich understanding of a central phenomenon (Creswell) and does not lend itself to generalizing study findings to a larger population. Snowball sampling was used to expand the information collected from the two agents.

The second limitation is related to the study participants and their interview responses to questions about the Greensburg tornado. This study, which was conducted nearly four years after the event, is also limited to the participants' personal perceptions and memories of their experiences of the tornado and the early community rebuilding process. Additionally, their personal and professional biases, those based upon their individual life experiences and/or education and training, provide further limitations.

The third limitation of this study is limited to the researcher's analysis of participants' responses and perceptions. Researcher expertise, knowledge and intuition are a vital part of the case study approach. Yin (2003) stated that the researcher determines what questions to ask, and how to ask them, what to observe and what to record. The researcher draws out issues of interest from the data, and constructs stories about those issues and/or people. In this study, the researcher determined how to present individual stories: what data and issues to include and focus on, and what to exclude—constantly making judgments about the significance of the data.

A key determinant of the quality of case study research is the quality of the insights and thinking brought to bear by the particular researcher (Merriam, 2003). This particular researcher has experience working with, and an understanding of, the Extension system and 25 years of experience as a working journalist; however, no matter how rigorous the researcher strives to be, this means that the research is not, and cannot be, completely objective, nor can the researcher easily make transparent *all* the judgments that have been made.

### **Definition of Terms**

*Cognitive dissonance.* Cognitive dissonance is the difficulty of people to establish equilibrium between their thoughts about their circumstances and the actual reality of their situation (Weick, 2001).

*Cooperative Research and Extension Service (CRES).* While all universities are involved in conducting research and teaching, the 100 land-grant universities throughout the nation have a third critical mission, Extension. Extension entails functioning as teaching and research institutions where land-grant institutions “extend” their resources to

solve public needs by utilizing university and/or college resources through non-formal, non-credit programs. The CRES is a cooperative effort of the United States Department of Agriculture, the land-grant university (in this case, Kansas State University), and the local Extension council representing local citizens (Cholick, 2008).

*Crisis communication.* Crisis communication shapes how the story of a particular event is told to the public at large, internal publics, and the media (Henry, 2000).

*Crisis management.* Crisis management is the way a crisis is managed to avoid further damage (Henry, 2000).

*Enhanced Fujita scale.* The newly revised Fujita scale, called the enhanced Fujita scale or EF scale, is based on the original Fujita scale that was created in 1971 by Ted Fujita. Both scales rate the strength of tornadoes in relationship to the degree of damage. The new scale became operational on February 1, 2007, and the Greensburg, Kansas tornado was the first tornado to be rated an EF-5 tornado, the strongest on the scale (Unruh, 2007).

*500 mbar chart.* The 500 mbar chart shows measurements of the pressure level in about the middle of the atmosphere (Haby, 2008).

*Land-grant institution.* A land-grant college or university is an institution that has been designated by its state legislature and/or Congress to receive federal support to carry out the mission of extending the university to the people of that state (Cholick, 2008).

*Risk communication.* Risk communication is the way the public is communicated with before, during, and after a crisis to prevent further risk (Henry, 2000).

*Risk management.* Risk management identifies a risk and anticipates the related possible consequences impact public safety (Henry, 2000).

*Sensemaking.* “Sensemaking is about sizing up a situation, about trying to discover what you have while you simultaneously act and have some effect on what you discover. Sensemaking, in other words, is seldom an occasion for passive diagnosis. Instead, it is usually an attempt to grasp a developing situation in which the observer affects the trajectory of that development” (Weick, 2001, p. 460). When a person is engaged in sensemaking, she is engaged in three phases: (a) looking at the problem in order to gather information, (c) thinking about what to do, and (d) acting on the problem. Sensemaking is a continual spiraling set of look, think and act phases.

*Tornado.* A tornado is a rotation column of air that extends from the clouds to the surface of the earth. Tornadoes often are generated by thunderstorms and are categorized on a scale of 0-5 with 5 being the strongest according to the Enhanced Fujita Scale (Edwards, 2008).

## CHAPTER 2

### REVIEW OF THE LITERATURE

This study's orientation regarding the flow of information within Extension is not typical of most "top-down" approaches to crisis communication, which occurs from top administrators to field agents. Rather, information is perceived as flowing from field agents who are engaged in the crisis to top administrators. By exploring how two KSRE agents made sense of the information available to them from the night of the Greensburg, Kansas tornado on May 4, 2007 through the post-disaster community rebuilding process currently underway, valuable field knowledge can be gleaned that can contribute to the improvement of crisis plans within U.S. Extension programs. Many organizations have crisis plans but few, if any, have plans for when key employees are personally involved in the crisis and yet must maintain service to customers (Dower, 1998). This chapter reviews the literature related to information needs and information seeking processes. Karl Weick's (2001) sensemaking model, which is central to the data analysis phase of the study's methodology, is described. Crisis communication literature is examined as well as literature on the role of the organization in crisis management.

#### **Information Needs and Information Seeking**

Research about information-seeking behavior during crises is in its infancy (Duggan & Banwell, 2004); however, studies in library science research can be drawn upon to help explain the process that the KSRE agents used and the context in which they used it while seeking information during the aftermath of the Greensburg tornado. Information seeking is a process whereby an individual's understanding of information needs evolves over time. The literature focuses on the information-seeking process:



stages, actors, strategies, sources, and the behavior of individuals seeking information (Wilson, 1999). The creation of models of the search process and its characteristics (Ellis, 1989; Kuhlthau, 1994) and the analysis of information seeking behavior in work settings is highlighted in Heinstrom's (2003) work. Chatman (1987) and Savolainen (1999) described information seeking behaviors in everyday life as comprising two categories: job-related and non-work related. The enormity of the Greensburg disaster dictates that this study draws on both work and non-work related information seeking behaviors because they are intertwined in the midst of catastrophic destruction.

As the crisis began and continued to unfold, the KSRE agents struggled with making sense of their situation and the best way to correct it. Weick's (2001) work on sensemaking will be discussed in-depth later in this chapter. His life work is based on information seeking and gathering in the midst of crisis while most other researchers focused on calmer times. Therefore, Weick's model is appropriate for guiding this study. Dervin (1999) also studied sensemaking, but she examined the behaviors of participants who were not dealing with a crisis. Furthermore, Dervin, Loreman-Wernet, and Lauterbach (2003) applied the metaphors of situation, gaps, and uses to depict information seeking and sensemaking activity. Their focus was on the role of the individual trying to bridge a gap in everyday situations and the nature of information as a situation-bound human construct instead of an information system-centered approach.

In a system-centered approach there is a recorded message stored within an information system whereby the information is transferred to information users. "Information transfer is a type of communication that is defined as the communication of a recorded message from one human or human mind to another" (Greer, Grover &

Fowler, 2007, p. 59). The information transfer cycle of creation, recording, reproduction, dissemination, bibliographic control, organization by disciplines, diffusion, utilization, preservation, and deletion, depicts the information life cycle (Greer, et. al., 2007). In this study, the focus is on the diffusion and utilization phases where the agents seek out information, strive to understand it, and then choose to use or not use the information gathered.

Chatman (1991) referred to the context of a “small world” with people living on the margins of society. Her small world referenced local and small communities where life is routine and predictable and information seeking is done within the shared norms and expectations of the members of the community. Chatman’s context could describe Greensburg, Kansas before the tornado. Her “theory in the round” assumes that people will only cross information-seeking boundaries when the information need is perceived as critical and life in the round is no longer functioning as normal, a situation that certainly describes Greensburg following the tornado.

A crisis upends the order of life. Savolainen’s (1995) study included the concept that the “way of life” directs information seeking. He defined the “way of life” idea as “the order of things.” He explained that information seeking is a “mastery of life” because people must take an active role in maintaining the order of things and this does not happen automatically. When the order of things is in crisis, people take an active “mastery of life” role in order to solve their problems.

An important model to draw upon for this study is Williamson’s (1998) ecological model of information seeking. This model suggests that the personal networks of family, friends, and co-workers closest to the user will be the most accessible and most sought out

in times of crisis. Other sources used in crisis are voluntary organizations, churches, and mass media. All these sources of information played vital roles in the Greensburg crisis. Also, some studies in information seeking in health situations (Warner & Procacciono, 2004) are relevant to this research. In times of crisis, emotional needs often overlap with informational needs.

### **Weick's Sensemaking Approach**

Karl Weick's (2001) information systems theory serves as the theoretical framework for this study. Specifically, the organizational approach to sensemaking described by Weick et al. (2005) provides a framework for understanding the way KSRE agents made sense of the information available to them from the initial moments the Greensburg tornado struck throughout the community rebuilding process.

According to Weick (1983), one can best understand the world by becoming a complicated person. Complicated people see more possibilities in situations, thereby being able to both reappraise situations more positively and discover those small changes that could provide remedies without changing too much. Complicated people draw from more hypotheses that bear on a given situation and possess a more complex repertoire of skills. Weick's model is based on the principle of requisite variety. "To regulate any environment, a sensor must be capable of registering as many states as there are states that can occur in that environment" (Weick, 1983, p. 364).

An analogy for Weick's (2001) model is that of a window ledge. Learning provides a base similar to a window ledge. The more one learns, the more one knows. The knowing derived from learning expands a person's window ledge; it grows wider and longer. When the person encounters difficult situations or tough times, she won't be

forced to jump because she has more options; she can move forward and backward, side-to-side, and at different angles. Walking along the ledge and climbing through a different window are possible maneuvers for the complicated person. The person may decide to jump from the ledge, which demonstrates the essence of being a complicated person. Instead of being forced to jump, the complicated person has options from which decisions about the best action to take are made. Creating complicated employees for KSRE will be critical to the success of agents in future disasters.

Weick (2001) provided a vivid illustration of his approach to sensemaking by describing a scene with a colleague at a conference. Karl Weick and Richard Hackman were passing notes back and forth during a conference session in order to pass time. Hackman drew two tombstones representing those of his colleague and himself. On his tombstone, Hackman wrote, "He Saved the World." On Weick's tombstone, he wrote, "He Understood the World," and below both tombstones he wrote, "And they were both kidding themselves" (Weick, 2001, p. 5). In sharing this story, Weick (2001) summarized his entire life's work in the following sentence: "What happens in my case is that my own desire to understand the world has led me to attribute the same desire to the world itself. Thus, I view organizations as collections of people trying to make sense of what is happening around them" (p. 5).

Three aspects of Weick's (2001) sensemaking approach will be used to view the experiences of the Greensburg, Kansas Extension agents' tornado and post-tornado experiences: (a) improvisation, (b) high reliability performance, and (c) continuous change. By gleaning information from the KSRE agents who directly experienced the Greensburg tornado, the CRES can help agents across the country become more

“complicated persons” with more complex repertoires of skills. These CRES agents will be enabled to improvise, which is an important part of Weick’s sensemaking model.

**Improvisation.** The improvisation definition Weick (1989) used most was, “improvisation involves reworking pre-composed material and designs in relation to unanticipated ideas conceived, shaped and transformed under the special conditions of performance, thereby adding unique features to every creation” (p. 544). He explained, the “study of jazz has been a sustained topic of my work” (Weick, 2001, p. x), and he described how he looked to jazz orchestras and, more recently, improvisation in smaller groups to clarify his thinking about how individuals make sense of their situations.

Extending his musical metaphor, Weick (2001) was quick to point out the substantive contribution of the melody. The melody is often overlooked because it is so small and simple; however, it is critical to remember that without the melody, there would be no jazz. The melody is an early and continuing influence throughout the musical composition. What he means is that for jazz musicians to be able to improvise, they must first know how to play the original melody.

Weick’s (1998) concepts about the importance of improvisation apply also to comedians, actors, and public speakers. They must know how to be funny, to act, and to speak before they can successfully do improvisation. In the case of this study, CRES agents must first understand their mission of bringing science-based information to their public constituencies and develop specific skill sets before they can improvise effectively in response to a crisis.

Weick (1998) contended, “to improvise is to improve memory...to gain retrospective access to a greater range of resources...it takes listening to oneself as well as

others” (p. 547). In this sense, the ability to improvise is a byproduct of people who learn and grow in their area of interest or, in Weick’s terms, people who learn how to complicate themselves.

It’s interesting to note that “dissonance” is a term that originated in the world of music. Weick (1998) discovered one limitation of improvising is that the faster the tempo, the more jazz musicians revert back to what they know. This is the same for organizations. There is an upper-limit on improvising and when that limit is reached, organizations and individuals may revert back to old ways. If this is the case, then it becomes even more important for the CRES to help agents understand how to deal with a crisis before it strikes and to build tacit knowledge that will serve those agents in times of extreme stress.

**High Reliability Performance.** Organizations that routinely operate with high levels of stress are referred to as “highly reliable organizations,” in which failure can result in catastrophic loss of life or injury (Weick & Sutcliffe, 2001). Examples of highly reliable organizations are aircraft carriers, medical facilities, and nuclear-power plants. These organized groups learn to act with consistency and effectiveness in environments where nothing can be taken for granted.

Weick and Sutcliffe (2001) discovered each highly reliable organization has a number of characteristics that can be applied to the business environment. These organizations are not fooled by success; they never rest, and they pick up on small changes. Highly reliable organizations listen to those persons positioned on the frontlines because these front-runners know the organization’s strengths and weaknesses. Furthermore, these organizations are not afraid to let unexpected circumstances provide a solution (Weick & Sutcliffe).

When something out of the ordinary happens, highly reliable organizations examine the extraordinary situation to determine if there is a benefit for the organization. The Greensburg tornado is one such extraordinary situation within which there could be a benefit for the CRES. Highly reliable organizations embrace complexity. These companies hire a diverse staff of people with diverse experiences so as to benefit from the collective brainpower of many. The organizations anticipate the future but realize there are limits to what they can control (Weick & Sutcliffe).

Highly reliable organizations learn to be mindful (Weick, 2001). Weick provided a definition of mindfulness as it relates to these organizations:

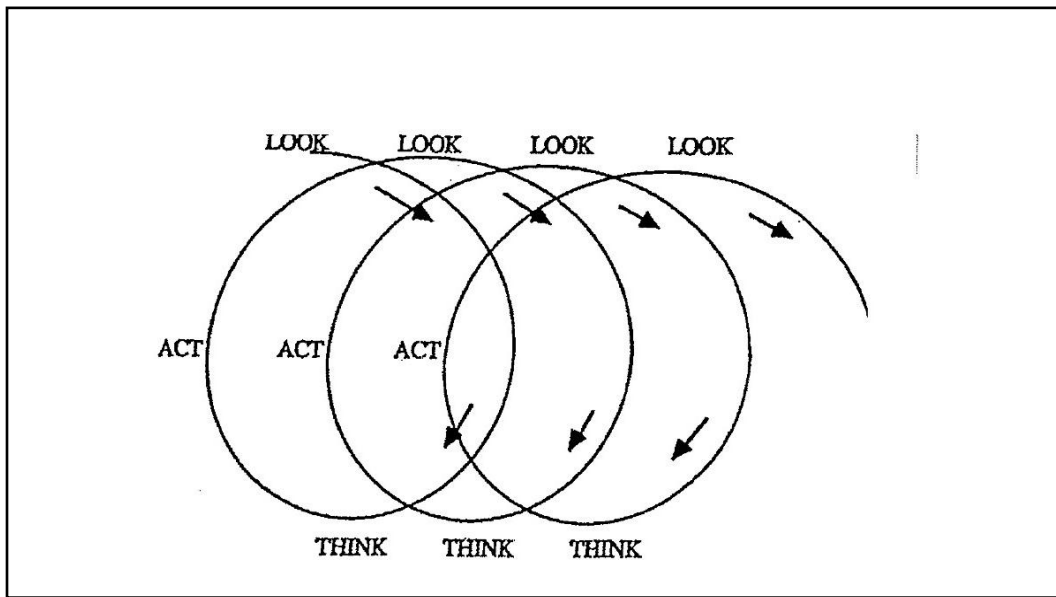
Mindfulness is the combination of ongoing scrutiny of existing expectations, continuous refinement and differentiation of expectations based on newer experiences, willingness and capability to invent new expectations that make sense of unprecedented events, a greater appreciation of context and ways to deal with it and identification of new dimensions of context that improves foresight and current functions (p. 32).

**Continuous Change.** In light of his perceptions about highly reliable organizations and mindfulness, Weick (2001) developed the third aspects of his sensemaking approach: continuous change. Basically, he explained that organizations don't just go along and then suddenly change. Organizations are changing day-by-day, and those individuals who are mindful notice the subtle changes that occur and adapt in a positive way. Problems arise when those small changes go unnoticed and build until they manifest as one big problem. So organizations don't suddenly change, they are perpetually changing.

From the immediate moments following the Greensburg tornado, the KSRE agents were experiencing ongoing change. A helpful concept that applies to the agents' experiences is that understanding passes through three phases: simplistic, complex, and profoundly simple. When this concept is applied to change theory, a sequential description of change is possible: (a) things change, (b) we've researched the variables to change and found it to be a complex and multifaceted phenomenon, and (c) things never stay the same (Schutz, 1988).

In terms of organizations, Weick (2001) reported that organizations don't just change; rather they are continuously changing. By utilizing Weick's approach to sensemaking, which is based on Stringer's (1999) action research interactive spiral of look, think and act (see Figure 4), patterns of change will become recognizable in the lived experiences of the two KSRE agents who survived the Greensburg tornado of 2007. Weick's (2001) sensemaking approach will be a critical part of the study's methodology, capable of generating insight about how to predict the information needs of agents and their constituents in the future.





*Figure 4.* Stringer's (1999) sensemaking research approach

## **Crisis Communication**

The inception of crisis management and crisis communication is linked to the Johnson & Johnson's cyanide-laced Tylenol capsules case (Burnett, 1998). The company's honest and upfront approach to the crisis has been cited as an excellent model for managing a crisis. Since that time, a large body of literature has been developed on crisis communication. Crisis communication is the "dialog between the organization and its publics prior to, during and after the negative occurrence" (Fern-Banks, 2002, p. 2).

Henry (2000) explained that crisis management and crisis communications are closely related to risk management and risk communication:

Crisis management is how a crisis is managed and hopefully avoided; crisis communication shapes how the story is told to the public at large, internal publics, and the media; Risk management identifies a hazard and anticipates the related risk that could impact public safety; *risk communication* [is] how the public is communicated with before, during, and after such a crisis. (p. 1)

Furthermore, Henry described the rules involved with such communications:

The rules that a professional communicator follow are virtually the same once an incident happens and is ready to become, or already is, a crisis. Crisis communications is all encompassing and anticipates and includes all hazards and risk. In effect, risk communication is crisis communications. (p. 1)

Seeger, Sellnow, and Ulmer (2003) defined crisis as "an unusual event of overwhelmingly negative significance that carries a high level of risk, harm and opportunity for further loss" (p. 4). Fink (1986) outlined four distinct stages of a crisis: prodromal, acute, chronic, and crisis resolution (Figure 5).

Fink (1986) described each of the stages:

*Prodromal Stage*—the pre-crisis or warning stage, if there is a warning stage. The reason the Prodromal stage is so important is that it is much easier to manage a crisis in this stage; *Acute Stage*—the point of no return. You can almost never recover lost ground and the damage that has been done’ but the amount of damage depends on the actions during this stage; *Chronic Stage*—often called the clean up phase, or the post-mortem. It is during this stage that the carcass gets picked clean. Assuming of course, that a carcass remains to be picked. It can linger indefinitely, but is a period of recovery; and *Crisis Resolution Stage*—the goal of the other three stages. The organization is well and whole, or is already headlong into another crisis. (p. 21-25)

The FEMA (2009) classifies disasters according to the same stages as Fink (1986) and gives them different titles: preparedness, response, recovery and mitigation. Being prepared is the first step, according to Henry (2000). “Anticipate every possible crisis. Then develop a communications plan for each potential crisis. Be prepared to respond immediately; this is essential if one hopes to avoid a crisis or be able to manage one if the inevitable happens” (Henry, 2000, p. 22). Poor communication can cause an inability to recover following a crisis (Seeger, et al., 2003).

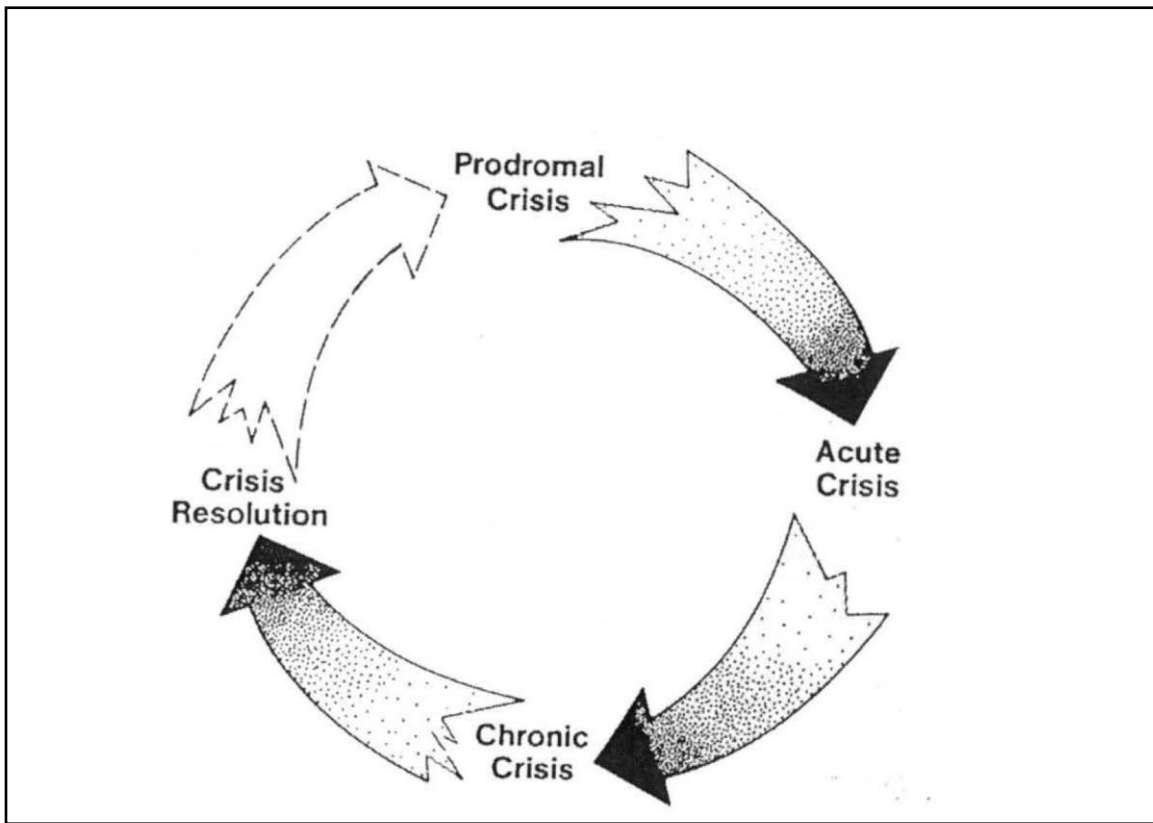


Figure 5. Fink's crisis cycle (Fink, 1986, p. 26)

## **The Role of the Organization in Crisis Management**

“Properly implemented workplace disaster management plans have the potential to hasten both employees’ and the entire community’s emotional recovery from disaster” (Schouten, Callahan, & Bryant, 2004, p. 14). Maslow (1970) stated that physiological and safety needs are the most fundamental in his hierarchy of needs, and this is especially true in a disaster. Organizations can manage the effects of disasters, real and potential, by including preventative planning and training, responding competently during the event itself, and providing social support and post-event services (Stith, Panzer, & Goldfrank, 2003). The importance of the plan to an organization is three-fold: (a) mitigation of the physical, psychological, and business impact of disasters; (b) meeting legal obligations to engage in such planning; and (c) the positive effect of such activities on employees’ relationships to the workplace (Schouten et. al., 2004). The benefits from a well designed and executed plan when a disaster strikes is that employers will see higher job satisfaction, retention of employees, increased productivity, decreased health consequences, and a reduction in possible legal liability (Crabbs & Black, 1984; Sanchez, et. al., 1995; Schouten et al., 2004; Ursan & McCarroll, 2004).

Individuals who have been trained for disasters usually fare better in a disaster. Planning and rehearsal reduce morbidity and mortality. Weisaeth (1989) studied victims of plant explosion and found that the level of the individual’s preparedness was the strongest indicator of a positive outcome based on seven variables of behavioral response to the event:

- cognitive function,
- inadequate behavior that increased risk to self or others,

- help received,
- leadership,
- cooperative activity,
- absolute rescue effort that helped reduce risk to self or others, and
- relative rescue effort, a measure of reasonable behavior under the person's specific circumstances.

Seventy-one percent of those who had disaster training or experience responded optimally; no one without such training and experience did so (Weisaeth, 1989). Schat and Kelloway (2000) found that training employees also increases effectiveness in disasters by giving them a sense of control.

When the disaster affects both the organization and the community, organizations should not rely only on the community disaster-management plan because both the organization and employees become passive victims. Without a plan, critical interests like insuring worker safety, limiting damage to the workplace infrastructure, and regaining the ability to conduct business is left to others without critical organizational knowledge. An organizational plan should interface with the community emergency plan and may even compensate for any weak spots in the community plan (Schouten, et al., 2004).

This is especially true for KSRE where the mission is to assist communities in solving problems and increasing the quality of life for the members of the community it serves. Tierney (2004) found that in times of crisis, employees turn to friends, family, and coworkers for all types of support. Peer support from co-workers is an important part of any response plan and should be considered when developing post-event communication

strategies (Schouten et al., 2004). An important aspect of this study is to determine whom the KSRE agents in Greensburg turned to for information and assistance.

Crises generally fall into three categories: act of nature, intentional, and unintentional. In all three cases, there are two possible general outcomes: (a) violent and cataclysmic with immediate loss of life or property or (b) nonviolent with sudden upheaval but damages, if any, are delayed (Newsome, Turk & Kruckeberg, 2007). Certainly, the Greensburg, Kansas tornado was an act of nature with violent and cataclysmic results of extensive damage and loss of life. The KSRE in Greensburg, along with many other community-based organizations, was suddenly thrust into a crisis situation.

Throughout the years, the USCREs has responded to numerous problems and crises of communities, such as local economic depressions and regional droughts to problems on more of a national scale, such as world wars and the Great Depression (Bosch, 2004; Cartwright, Case, Gaager, & Hathaway, 2002). In almost all cases, the Extension agents who provide the information were not as severely affected personally by the crisis as the citizens they were trying to assist. For example, in the case of the Great Depression, the Extension agents were employed as professionals with benefits, while those they were assisting were in many cases jobless and often homeless. In contrast, the agents who responded to the tornado victims in Greensburg were also victims living in the same situation as the people they were attempting to help.

A study conducted by Whiting, Tucker, and Whaley (2004), results indicated that only 60 % of land-grant universities that participated in the study had a central crisis communication plan. One-third of the universities lacked awareness of any

communication crisis plan for their specific program. These researchers recommended that a top-down communication approach to crisis communication be implemented nationwide for the CRES.

However, a study of the communication efforts by Florida Extension Agents during the 2004 hurricane season suggested taking a more bottom-up approach to crisis communication because “Florida’s Extension professionals were on the frontline to provide aid to storm victims, sometimes when the professionals themselves were also severely affected by the storm” (Telg, Irani, Muegge, Kistler, & Place, 2007, p. 9). These researchers recommended that Extension agents should be better informed about their roles during disasters and how to react in these situations. The researchers further argued that one way to develop a more informed response team was to learn from those agents serving on the frontlines. This approach empowers Extension agents to be more resilient in the face of a crisis.

According to Ripley (2008) several traits are associated with resilience:

- the ability to make realistic plans with the steps to reach the goal,
- a positive self-concept with confidence in one’s abilities,
- skills in problem solving and communication, and
- the ability to manage and control strong emotions and feelings.

Bonanno (2004) defined resilience when dealing with loss and trauma as the ability of adults in otherwise normal circumstances who are exposed to something as traumatic as the Greensburg tornado to maintain relative stable, healthy levels of psychological and physical functioning. He states the pathways to resilience are hardiness, self-enhancement, repressive coping, and positive emotion and laughter.



**Hardiness.** The personality trait of hardiness helps to buffer exposure to extreme stress (Kobasa, Maddi, & Kahn, 1982). Hardy people are committed to finding a meaningful purpose in life, and they believe they can influence their surroundings and the outcome of events. Hardy people also believe they can learn and grow from both positive and negative life experiences (Bonanno, 2004). Individuals exhibiting traits of hardiness have been found to appraise potentially stressful situations as less threatening, thus minimizing the experience of distress. They are more confident and better able to cope with the situation and deal with the distress they experience (Florian, Mikulincer, & Tauban, 1995).

**Self-Enhancement.** This term refers to a type of motivation that works to make people feel good about themselves and to maintain self-esteem. This motive becomes especially prominent in situations of threat. Individuals who self-enhance under normal conditions are often viewed as narcissistic; however, in highly aversive situations, it seems to be less problematic (Taylor & Brown, 1988). In a study of individuals who were in the World Trade Center towers at the time of the September 11, 2001 attack, self-enhancers reported better adjustment and were said to be better adjusted by their close friends (Bonanno, Rennieke, Dekel, & Rosen, 2003).

**Repressive Coping.** The concept of repression has a history. Originally, Freud thought of it as a sort of force holding uncomfortable thoughts beneath the surface of consciousness. Though such repressed thoughts would not rise into awareness, they would motivate behavior in subtle ways. More recently, the same term repression has been used

to describe a coping style designed to reduce anxiety by way of avoiding information that might provoke it (Dombeck, 2011).

Repressors avoid unpleasant thoughts, emotions and memories (Weinberger, 1990) and operate through emotion driven mechanisms while hardiness and self-enhancement are cognitively driven. Emotional dissociation is viewed as a trait for those who have a difficult time coping, but in times of extreme adversity it can foster adaptability (Bonanno & Singer, 1990).

**Positive Emotion and Laughter.** Positive emotions can help reduce levels of distress following traumatic events by quieting or undoing negative emotion (Fredrickson & Levenson, 1998). Humor can help individuals survive even during horrible events like the World Trade Center attack. A survivor reported a group of office workers who were running down flight after flight of steps, not knowing if they had the strength to make it to the bottom. By the time they had reached the 11th floor, they were exhausted and couldn't go on. Then one woman suggested that they pretend it was New Year's Eve. En masse they began a countdown with each flight of stairs and shouted out. "10, 9, 8, 7, 6, 5, 4, 3, 2, 1." This game gave them the distraction and energy they needed. Encouraged by the levity, they all made it to the street and to safety (Wooten, 2011).

In the midst of an actual crisis, some have a better chance of surviving than others (Siebert, 2007). Survival in a deadly crisis is challenging because of the shock and unexpectedness of the threat. During the chaotic turmoil of a deadly emergency, some people feel overwhelmed and freeze. Others panic and do senseless things that reduce their survival chances. Many become highly emotional and believe they are going to die.

In contrast, a few people quickly comprehend the reality of the new situation. They accept that they could die but don't panic and take action to increase their chances of surviving. In real life crisis situations, many believe that people will fight to survive at the expense of others. Siebert (2007) indicated it is not "either me or you," it is "both me and you." Stories of survivors often show that in the survival event they extend their coping skills and their commitment to live to those around them. They act to keep both themselves and others alive. The habitual way an individual reacts to everyday challenges influences the chances of being a survivor in a crisis or an emergency.

According to Siebert (2007), the interaction includes these core elements:

- quickly absorb accurate information about what is happening,
- feel confident that something can be done to influence events in a way that leads to a good outcome,
- be willing to consider using any possible action, and
- do whatever it takes.

Those who survive are generally habitually curious. This habit predisposes a survivor to quickly evaluate the new situation. This ability is defined as pattern empathy and means that an individual assesses the situation and then scans internally for the best action to take based on prior experiences or training. Siebert (2007) found that this is usually an automatic response and often the survivors are surprised at what they have done and how they knew to do it.

When dealing with crisis communications, it is important to focus on the resiliency of people while at the same time recognizing that they may also need help along the way. Mental health professionals continue to analyze lessons from 9/11 and other traumatic

events. Briana Goff (2011), a professor at Kansas State University's School of Family Studies and Human Services who studies post-traumatic stress disorder and traumatic stress, said that while the mental health model in use changed after 9/11, tactics used then to help trauma victims are still used today.

“It started out as debriefing for providers, emergency personnel, police, and people who witnessed the event immediately after the fact. We identify people who are at risk for long-term mental health issues. It's a support service, different than traditional mental health service in an office” (Goff, 2011, p. 2). After 9/11, mental health workers realized they needed to provide individuals an opportunity to talk about their experience and find support. The mental health model used now at disasters is known as psychological first aid, called so because of its focus on immediate support, not necessarily on immediate counseling.

Mental health workers also monitor and evaluate how disaster response staff is dealing with their experience. This is part of secondary trauma that may befall the helpers in these situations. Most, if not all, survivors of a disaster have some trauma. The key issue is how they opt to deal with the trauma. If they get into a stable routine and are able to move forward with local emotional support, they most likely will be fine (Gibbons, 2011).

Goff (2011) agreed, adding that she believed in the resiliency of people involved in disasters and traumatic events. She said it is possible that those who were treated in a traditional mental health manner instead of the psychological first aid model may not have been helped to the full extent.

“People want to be helpful, so they show up in their office clothes, and they're just not prepared. You need to be in your tennis shoes and jeans. It's an organized response, but you have to be willing to sort through everything. You're not in an office asking people how they feel; you're handing out water and food—that is mental health in disaster relief” (Goff, 2011, p. 2).

An important lesson Red Cross disaster response staff learned following 9/11 was that mandatory debriefing before leaving a disaster site was more harmful than helpful for many individuals according to Gibbons (2011, p. 3). “It forced them to revisit the trauma right before returning home. Subsequently, the mental health protocols changed to eliminate the mandatory debriefing. In the years since 9/11, there have been tremendous strides in the techniques for the treatment of psychological trauma” (Gibbons, 2011, p. 3). Reviewing a community's disaster plan after a disaster is the best way to learn from mistakes or victories. Every state has a disaster mental health team, and every disaster is different (Goff, 2011). “It's healthy to look back and remember. The resiliency of humans has to be assumed. Everyone will be impacted, but we're not coming in and assuming a problem. It's saying, ‘I know you're resilient, but how can we best get your feet back under you?’” (Goff, 2011, p. 2).

Another critical area in crisis communication is to plan for people who don't prepare for a disaster. Disaster scientists and emergency planners gather in Boulder, Colorado for an invitation-only workshop each July. After 9/11, the people at the Boulder conference decried the nation's myopic focus on terrorism. They lamented the decline of the FEMA. They warned to the point of cliché that a major hurricane would destroy New Orleans. It was a convention of prophets without any disciples (Ripley, 2011).

The challenge in the U.S. today is not predicting catastrophes, but preparing for them. Dennis Mileti headed the Natural Hazards Center for 10 years, and is the country's leading expert on how to warn people so that they will pay attention. Today he is semiretired, but he returns to the workshop annually to preach his gospel. This July, standing before the crowd in a Hawaiian shirt, Mileti was direct: "How many citizens must die? How many people do you need to see pounding through their roofs?" (Ripley, 2011, p. 3). Like most people there, Mileti was heartbroken by Katrina, and he knows he will be heartbroken again. We know exactly where the major disasters will occur. But individuals under-perceive risk (Ripley, 2011).

Humans get serious about avoiding disasters only after a disaster. People know bad things can happen, and people make disasters much worse by lack of initiative and ignoring risk. This is not new. In A.D. 63, an earthquake seriously damaged Pompeii and the locals rebuilt in the same location. A volcano buried them 16 years later. But even now people are negligent at protecting themselves from guaranteed threats. We know more than we ever did about the dangers we face. But in times of crisis, our greatest enemy is rarely the storm, the quake or the surge itself. More often, it is us (Ripley, 2011).

In a *Time* poll, about half of those surveyed said they had personally experienced a natural disaster or public emergency. Only 16% responded that they were "very well prepared" for the next one. Of the remaining, about half explained their lack of preparedness by saying they don't live in a high-risk area. In fact, 91% of Americans live in places at a moderate-to-high risk of earthquakes, volcanoes, tornadoes, wildfires, hurricanes, flooding, high-wind damage, or terrorism, according to an estimate calculated for *Time* by the Hazards and Vulnerability Research Institute at the University of South

Carolina. Americans tend to be die-hard optimists, literally. It is part of what makes the country great and invincible (Ripley, 2011, p. 3).

“There are four stages of denial,” says Eric Holdeman, director of emergency management for Seattle's King County, which faces a significant earthquake threat. “One is, it won't happen. Two is, if it does happen, it won't happen to me. Three: if it does happen to me, it won't be that bad. And four: if it happens to me and it's bad, there's nothing I can do to stop it anyway” (Ripley, 2011, p. 3).

At the close of the Boulder workshop this year, Kathleen Tierney, head of the Natural Hazards Center, stood up to say, “We as human societies have yet to understand that nature doesn't care. And for that reason, we must care. History has left us all the clues we need. Now we wait for the heartbreak” (Ripley, 2011, p. 3).

The heartbreak actually continued in 2011 with the deadliest year for tornadoes. This tornado season prompted calls by weather and emergency officials to change how warnings are issued and tornado sirens are used. The need for change is reinforced by a government study of the warnings issued before and during the May 22, 2011 Joplin, Missouri tornado. The storm killed 162 people, and it was the highest on record for fatalities by a single tornado since tornado statistics began in 1950. Butler County, Kansas Emergency Management Director Jim Schmidt said that we're not as safe as we think we are, and this has been a wake-up call for a lot of people (Finger, 2011).

Tornadoes killed more than 540 people in 2011—the most in 75 years. More than 300 died on April 27, when 202 tornadoes touched down in 14 states in the southeastern United States. And then came that Sunday night in May in Joplin, and the notion that tornadoes no longer cause high death tolls because of more effective and accurate

warnings was proven incorrect. The Joplin assessment team interviewed dozens of survivors; most did not immediately seek shelter after hearing the initial warning. They were looking for some sort of independent confirmation of the impending threat, according to Richard Wagenmaker, meteorologist-in-charge at the Detroit branch of the National Weather Service, who headed the assessment team (Finger, 2011). Many went outside to look around, and that can be a deadly choice when dealing with fast moving tornadoes. The Joplin tornado was invisible to many residents because of the heavy rain. There were many stories of people running to shelter just as the tornado struck despite significant advance warning of the risk in the report (Finger, 2011).

Mike Smith, senior vice president of AccuWeather Enterprise Solutions, blamed those delayed efforts to find shelter on the fact that Joplin also sounded tornado sirens any time severe thunderstorm winds are expected to exceed 75 mph. This confused people, and they didn't know if the sirens meant a tornado was eminent or if it was just strong winds. After reading the government report, Smith said there is now no doubt in his mind that that practice cost lives in Joplin (Finger, 2011).

The government study of the Joplin tornado recommended that storm warnings be "impact-based" so residents clearly understand the potential danger. An example, Schmidt said, would be to say a storm has the potential for hail the size of baseballs, which could do significant damage to vehicles and other property (Finger, 2011).

The report suggested The National Weather Service should work with partners who can provide warnings through mobile communication technologies such as text messages and smart phone alerts (National Weather Service, 2011). That included encouraging equipment upgrades that would allow emergency managers to sound only



those tornado sirens in the direct path of a threatening storm. The report indicated that clearer language for warnings was needed, too.

As a massive tornado closed in on Greensburg shortly after sunset on May 4, 2007, the Dodge City branch of the weather service issued a tornado emergency for the town. That had never been done before, but the alert drove home to Greensburg residents how serious the threat was. Officials have credited the alert and residents' quick and appropriate steps to take shelter with keeping the death toll low even though the tornado—an EF5 that was 1-3/4 miles wide, with sustained winds topping 200 mph — all but wiped the Greensburg off the map (Finger, 2011).

Yet early warnings and clear language won't guarantee that people will do what they should when severe weather threatens. Joplin survivors told the assessment team they believed there was a “protective bubble” over the city, that bad storms always seemed to miss it, that the sirens sounded all the time and nothing bad ever happened (National Weather Service, 2011).

Nationally, there is still no federal law requiring state and local officials to plan for the evacuation of the sick, elderly, disabled or poor. Recently, both houses of Congress passed bills that require locals to plan for the evacuation of pets. This legislation stems from the lessons learned during hurricane Katrina. The media showed vivid photos of people and animals stranded on rooftops. When rescue teams came to help, many people refused to go because the rescue teams were to rescue humans, not animals.

During a public presentation at Kansas State University, Taboda (2011) said the human-animal bond is a strong one that crosses all ethnic and financial lines.

We learned that to help the people we had to help the animals. During a crisis and

evacuation, we learned we have to inform people that they should and can take their animals with them, and they will receive the help they need. Crisis communicators also have to work with local media and volunteers to make this culture change. Many emergency volunteers are still operating under older rules that indicate aid is just for people, and the media is distributing old information. This is an emerging part of crisis communication and evacuation plans.

During Katrina, our Dean at the Louisiana State University School of Veterinary was breaking all the rules to get the job done. He allowed vet students to come to the school with all of their animals to ride out the storm, and it was Noah's Arch of Baton Rouge. (Taboda, 2011)

It was that same group of students who started the shelter for Katrina animal victims, and during the time they ran the shelter they cared for 2,000 animals. Interestingly enough, a human medical shelter was also operating at Louisiana State University. Taboda (2011) said, "If you look at the pictures I have of both shelters, the medical staffs in both facilities are providing the same kind of care." The care of animals during a crisis is becoming more regulated and planned.

The American Veterinary Medical Association (AVMA) has created Veterinary Medical Assistance Teams (VMAT) that serve as the first responders to ensure high quality care of animals during disasters. When requested by a state, VMATs provide operational emergency response programs to state animal health authorities, veterinary medical associations and other relevant organizations. It also has teams of volunteers to help care for animals. The National Veterinary Response Teams (NVRT) are part of The National Response Framework (NRF) that utilizes the National Disaster Medical System

(NDMS), a part of the US Department of Health & Human Services; Assistant Secretary for Preparedness and Response (ASPR); and Office of Preparedness and Emergency Operations (OPEO). NVRT is a cadre of individuals within the NDMS system who have professional expertise in areas of veterinary medicine, public health, communication, and research. The NRF mission requirements of NDMS under Emergency Support Function-8 (ESF-8) provides assistance to state, tribal, and local governments (Table 2).

Table 2–National Response Framework

Emergency Support Functions and ESF Coordinators ESF #1–Transportation ESF Coordinator: Department of Transportation
---

- Aviation/airspace management and control
- Transportation safety
- Restoration and recovery of transportation infrastructure
- Movement restrictions
- Damage and impact assessment

ESF #2–Communications ESF Coordinator: DHS (National Communications System)
--

- Coordination with telecommunications and information technology industries
- Restoration and repair of telecommunications infrastructure
- Protection, restoration, and sustainment of national cyber and information technology resources
- Oversight of communications within the Federal incident management and response structures

ESF #3–Public Works and Engineering ESF Coordinator: Department of Defense (U.S. Army Corps of Engineers)
--

- Infrastructure protection and emergency repair
- Infrastructure restoration
- Engineering services and construction management
- Emergency contracting support for life-saving and life-sustaining services

ESF #4–Firefighting ESF Coordinator: Department of Agriculture (U.S. Forest Service)
---

- Coordination of Federal firefighting activities
- Support to wildland, rural, and urban firefighting operations

ESF #5–Emergency Management ESF Coordinator: DHS (FEMA)
--

- Coordination of incident management and response efforts
  - Issuance of mission assignments
  - Resource and human capital
  - Incident action planning
  - Financial management
-

---

Table 2–National Response Framework cont.

ESF #6–Mass Care, Emergency Assistance, Housing, and Human Services  
 ESF Coordinator: DHS (FEMA)

Table 2–National Response Framework

- Mass care
- Emergency assistance
- Disaster housing
- Human services

ESF #7–Logistics Management and Resource Support  
 ESF Coordinator: General Services Administration and DHS (FEMA)

- Comprehensive, national incident logistics planning, management, and sustainment capability
- Resource support (facility space, office equipment and supplies, contracting services, etc.)

ESF #8–Public Health and Medical Services  
 ESF Coordinator: Department of Health and Human Services

- Public health
- Medical
- Mental health services
- Mass fatality management

ESF #9–Search and Rescue  
 ESF Coordinator: DHS (FEMA)

- Life-saving assistance
- Search and rescue operations

ESF #10–Oil and Hazardous Materials Response  
 ESF Coordinator: Environmental Protection Agency

- Oil and hazardous materials (chemical, biological, radiological, etc.) response
  - Environmental short- and long-term cleanup
-

---

Table 2–National Response Framework Cont.

ESF #11–Agriculture and Natural Resources  
 ESF Coordinator: Department of Agriculture

- Nutrition assistance
- Animal and plant disease and pest response
- Food safety and security
- Natural and cultural resources and historic properties protection
- Safety and well-being of household pets

ESF #12–Energy  
 ESF Coordinator: Department of Energy

- Energy infrastructure assessment, repair, and restoration
- Energy industry utilities coordination
- Energy forecast

ESF #13–Public Safety and Security  
 ESF Coordinator: Department of Justice

- Facility and resource security
- Security planning and technical resource assistance
- Public safety and security support
- Support to access, traffic, and crowd control

ESF #14–Long-Term Community Recovery  
 ESF Coordinator: DHS (FEMA)

- Social and economic community impact assessment
- Long-term community recovery assistance to States, tribes, local governments, and the private sector
- Analysis and review of mitigation program implementation

ESF #15–External Affairs  
 ESF Coordinator: DHS

- Emergency public information and protective action guidance
- Media and community relations
- Congressional and international affairs
- Tribal and insular affairs

Source: National Response Framework. (2011, September 20). Homeland Security: National Response Framework [Electronic version].

This National Response Framework support is in the following core functional areas:

- assessment of public health/medical needs,
- health surveillance,
- medical care personnel,
- health/medical/veterinary equipment and supplies,
- patient evacuation,
- patient care,
- safety and security of drugs,
- biologics and medical devices,
- blood and blood products, and
- food safety and security.

Operational support may also be rendered by the NVRT to other Federal partners such as the USDA and FEMA under ESF-6, Mass Care, in the support of the Pets Evacuation and Transportation Standards Act (PETS Act) (AVMA, 2011).

PETS Act stated “state and local evacuation plans should specify procedures to address the pre-positioning of food, medical and fuel supplies. These plans should address establishing first-aid stations, tracking and coordinating movements of evacuees, evacuating pets, unaccompanied minors, the elderly, and evacuating people who lack the means to leave voluntarily” (AVMA, 2011, p. 2).

The NVRT provides assistance in identifying the need for veterinary services following major disasters, emergencies, public health or other events requiring Federal support and in assessing the extent of disruption to animal and public health infrastructures. The NVRT is a fully supported Federal program.

These responsibilities include

- assessing the veterinary medical needs of the community,
- medical treatment and stabilization of animals,
- animal disease surveillance,
- zoonotic disease surveillance and public health assessments,
- technical assistance to assure food safety and water quality, and
- hazard mitigation care and support of animals certified as official responders to a disaster or emergency.

NVRT personnel are private citizens who have been approved as intermittent Federal employees and are activated in the event of a disaster. The personnel are comprised of individuals with diverse expertise to include veterinarians, animal health technicians, pharmacists, epidemiologists, safety officers, logisticians, and communications specialists who train for what might be experienced during a response. A regional supply of equipment, supplies and pharmaceuticals enables them. Personnel are required to maintain professional certifications and licensure of their discipline. As intermittent Federal employees when personnel are activated, during the length of a deployment their licensure is recognized by the state(s) requesting assistance. Deployed personnel are compensated for their duty time by the Federal government. In an emergency or disaster response, the NVRTs work using the Incident Command System (ICS). Teams provide assessments, technical assistance, and public health and veterinary services under the guidance of state and/or local authorities (AMVA, 2011).



## CHAPTER 3

### METHODOLOGY

This qualitative case study explores how the Kansas Research and Extension (KSRE) agents made sense of the information needed personally, as family and community members, and professionally, as agents serving the community of Greensburg, Kansas from the night the tornado struck throughout the community rebuilding process. The overarching research question of this study follows: What is an effective information transfer role KSRE agents and administrators can perform in the aftermath of a crisis? Six additional research questions provide guidance for this study:

- What information did the KSRE agents require and how did they acquire it?
- What was the quality or richness of the information acquired?
- Was any of the required information made available to the KSRE agents prior to the Greensburg tornado?
- At what time during or after the disaster did the agents experience moments of cognitive dissonance?
- How did the agents regain balance between thought and action during times of cognitive dissonance?
- What part did KSRE coworkers and administrators play in assisting agents with their needs?

#### **Nature of Qualitative Research**

Weick (2001) explained that when people are under stress, such as was the condition of the victims of the Greensburg tornado, they require large quantities of

information; rich information from which they can establish equilibrium in the midst of unintelligible disaster. This rich information enables victims of natural disasters to alter their understandings within a specific time interval. Therefore, a qualitative approach to research is appropriate for this study because the aim is to generate a thick, rich description of a central phenomenon (Creswell, 2005). In the case of this study, the central phenomenon is the tornado victims' need for information as gleaned from the lived experiences of two KSRE agents. The term "lived experience" is typically associated with phenomenological studies "to emphasize the importance of individual experiences of people as conscious human beings" (Moustakas, 1994, p. 123). By this definition, lived experience is appropriately used in this single case study that examines the experiences of two KSRE agents who lived through a tornado and participated in the community rebuilding process.

Merriam (2002) explained, "The key to understanding qualitative research lies with the idea that meaning is socially constructed by individuals in interaction with their world" (p. 3). She identified four key characteristics of qualitative research:

1. the focus is on understanding how people make sense of their experience,
2. the primary instrument for data collection and analysis is the researcher,
3. the approach is inductive, meaning that the goal is to gather data for the purpose of building concepts and theories in situations where a phenomenon is inadequately understood, and

4. the end result is a richly descriptive account of the investigation; i.e., words and pictures that convey what has been learned about a phenomenon.

These characteristics describe a qualitative study, which are consistent with Weick's (2001) approach to making sense of information.

### **Research Design**

This study employed the single-case study research design. Case study research involves inquiring about a particular issue, or phenomenon, through one or more cases within a bounded system (Creswell, 2007, Merriam, 2002). A case can be a person, a site, an event, a process, a setting, or community or other bounded system that exhibits the characteristics of the phenomenon being studied. For this study, the case is a catastrophic event: the 2007 Greensburg tornado. The case study methodology was selected because it allows the researcher access to richer information than do other research methodologies and fosters a greater understanding of crisis management (Richardson 1993).

Merriam (2002) addressed the issue of generalizability from the perspectives of multiple researchers, explaining that much can be learned from a single case study:

Readers can learn vicariously from an encounter with the case through the researcher's narrative description (Stake, 2000). The colorful description in a case study can create an image—"a vivid portrait of excellent teaching, for example—can become a prototype that can be used in the education of teachers or for the appraisal of teaching" (Eisner, 1991, p. 1999). Further, Erickson (1986) argues that since the general lies in the particular, what we learn in a particular case can be transferred to similar situations. (Merriam, 2002, p. 179)

In this study, much of what can be learned from the participating KSRE agents about their experiences of living through a catastrophic tornado and participating in post-disaster community rebuilding can be transferred to other CRES programs located in geographical regions where tornadoes occur.

### **Research Site and Sampling**

Greensburg, Kansas was chosen as this study's research site because the KSRE agents, as residents of Greensburg, were victims of the tornado; yet they were required to fulfill their professional duties as KSRE agents.

In qualitative research, purposeful sampling is used to draw from participants who can best contribute to an understanding of the issue or central phenomenon (Creswell, 2005, 2007; Merriam, 2002). In this study, purposeful sampling was used to select both the research site and the participants. The sampling strategy was to select a critical sample that represented an exceptional knowledge about the tornado and its aftermath. The Greensburg event is a dramatic example of the destructiveness of a tornado and the two KSRE agents are representative of both the personal and professional lived experiences associated with a tornado encounter.

To further the understanding of the situation, snowball (chain-referral) sampling was used to identify the social networks the KSRE agents turned to for assistance. This technique is used when the population is unknown or hard to reach (Atkinson & Flint, 2001; Flick, 1998). This process is based on the assumption that a bond or link exists between the initial sample and others in the same target population, allowing a series of referrals to be made within a circle of acquaintance (Atkinson & Flint, 2003; Berg, 1988).

Snowball sampling helps to find research subjects by taking advantage of the social networks of identified respondents to provide an ever-expanding set of potential contacts (Thomson, 1997). One subject gives the researcher the name of another subject, who in turn provides the name of a third, and so on (Vogt, 1999).

Of particular interest were the KSRE agents and administrators the study participant agents contacted for help. Interviews with the individuals the agents contacted were conducted to get a fuller interpretation and understanding of the situation and enhance the ability of the researcher to address the research questions. This enabled the researcher to broaden the view of the way the KSRE organization as a whole responded to co-workers/employees in need.

### **Study Participants**

The two KSRE agents who were selected to participate in the study have been trained to deliver research-based information from Kansas State University to the residents of Kiowa County. Interviews were conducted with the KSRE agents, and the interviewees are referred to as Agent A and Agent B. Both are seasoned, middle-aged white women who are KSRE veterans with more than 10 years each of Extension experience. They have extensive tacit knowledge of the organization. They shared the tornado experience with their KSRE constituents and have given countless professional and personal hours to aid in the recovery and rebuilding of Greensburg. They are respected community members and professionals within the community with a vast knowledge of the impact of this crisis, both to Kiowa County and the KSRE. An additional 22 city officials, volunteers, Extension workers and community members were identified through snowball sampling and were interviewed. The interviewees are labeled

participant 1-22 and denoted as P1, P2, P3, etc. After interviews were transcribed, the information regarding Agent A and Agent B was sorted into the four phases of a crisis: Prodromal Crisis, Acute Crisis, Chronic Crisis and Crisis Resolution. Details of information need, source, use and satisfaction within each crisis phase was then coded as personal, family, employee and community member.

### **Protection of Human Subjects and Confidentiality**

In accordance with the Emporia State University Institutional Review Board (IRB), this study complied with the rules for the ethical treatment of human subjects and maintenance of confidentiality of records. The researcher adhered to specific guidelines: (a) permission to conduct the research was obtained from director of KSRE, (b) objectives of the study were explained to the study participants and a signed letter of consent to participate in the study was secured from each agent, (c) pseudonyms were assigned to the participating agents during data collection and analysis processes, and (d) IRB approval to conduct the study was obtained before beginning data collection (Appendix C).

Audio taped interviews and observational field notes are being maintained in a fireproof locked cabinet for five years at the researchers' home office. At the conclusion of the five-year period, all data will be destroyed.

### **Data Collection**

Multiple data collection strategies were used in this study: observations, interviews, and the review of archival documents. "Case study data collection involves a wide array of procedures as the researcher builds an in-depth picture of the case" (Creswell, 2007, p. 132). "A major strength of case study data collection," explained Yin

(2003), “is the opportunity to use many different sources of evidence” (p. 97). This section outlines each of the three data collection methods.

**Participant interviews.** Extensive interviews were conducted with each of the two KSRE agents in the Kiowa County Extension office from November 2010 to June 2011. The interviews consisted of a series of open-ended questions to help each agent visualize what happened, what they thought, and what information they used to make a decision about taking an action (see Appendix B for sample open-ended questions). This focus on movement through time, thought process, and activity was a useful technique for understanding the participants’ information needs and information-seeking behavior. The interviews were conducted in segments from the agents’ multiple points of view as an individuals, family members, employees, and community members. There is a spiral of “look, think and act” on each of the four segments as Figure 6 depicts. The spiral is continued in the spirals on all four areas through the agents’ story of making sense of their situation. The interviews were audio-recorded and later transcribed by the researcher.

To discover the way other Extension employees and administrators assisted the KSRE agents, the snowball technique was used to identify more interview participants. When a KSRE agent mentioned contacting another Extension worker for more information, the sample was increased to include that contact. Questions were asked about how well trained that worker felt to assist the KSRE agents in Greensburg and what he/she would do differently.

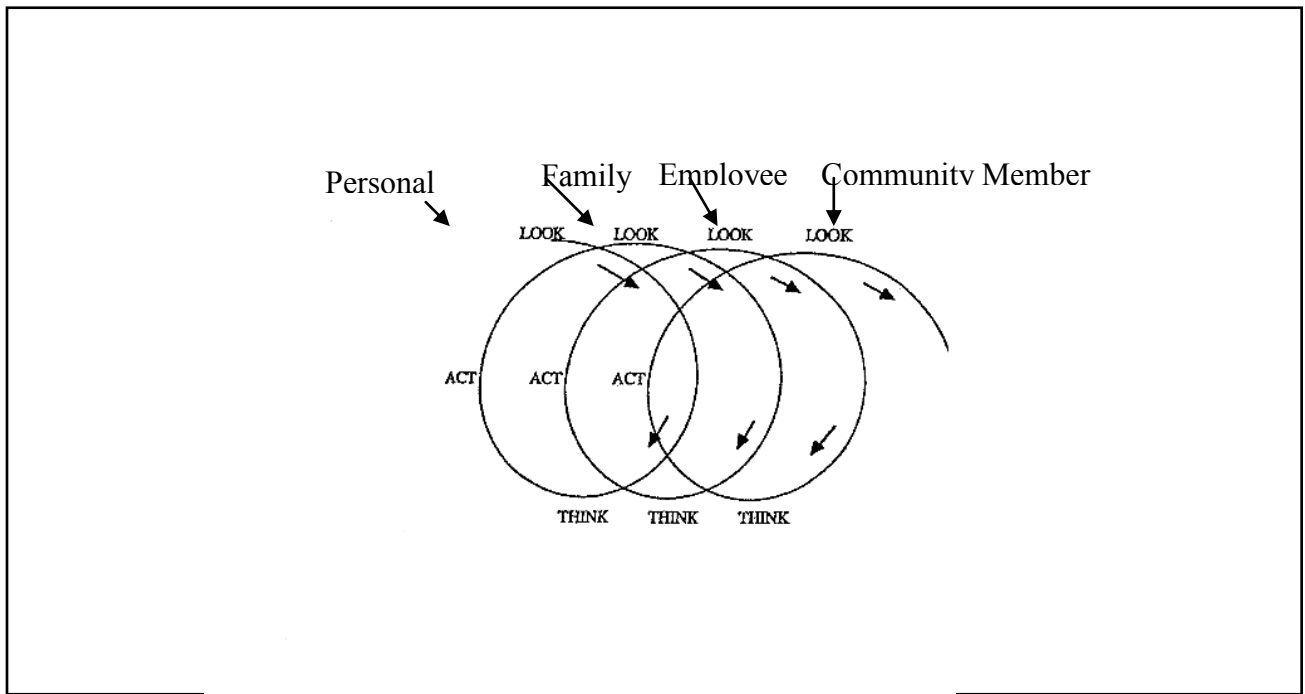
**Observational field notes.** Observing in a setting requires addressing issues such as the potential deception of the people being interviewed, impression management, and the potential marginality of the researcher (Hammersley & Atkinson, 1995). Interviews

took place in Greensburg, Kansas. Follow-up interviews were conducted via the phone or electronic messaging. Immediately following each of the interviews, the researcher compiled observational field notes to record impressions of the interviewee, the interviewee's stories, and reactions.

**Review of archival sources.** Although the primary source of data collection was the participant interviews, Yin (2003) argued that case study conclusions “cannot be based entirely on interviews as a source of information” (p. 76). Additional archival sources can provide data that captures other organizational and community-based events that contributed to the study participants' ability or inability to perform their information-dissemination duties as KSRE agents.

To gain a fuller understanding of the KSRE agents' experiences of the destructive tornado and the post-disaster community rebuilding process, it was helpful to draw from individual, organizational, and community-archived sources related to the people who survived the tornado. Examples of individual ancillary sources include dated documentaries, journal entries, archived e-mail messages and reports made by the participants who recorded behaviors, attitudes, perceptions, and actions taken during and following the tornado.





*Figure 6.* Interview spiral of KSRE agents' multiple points of view.

Examples of organizational archival sources include personnel policies and reports related to general emergency response and those specific to the Greensburg tornado. Finally, examples of community sources include media—broadcast, electronic, and print—accounts of the Greensburg tornado, and residents’ chronicled accounts of personal experiences.

### **Data Coding**

Data from the interviews transcripts, field notes and documents were coded at two levels: the four crisis intervals (prodromal, acute, chronic and resolution) and look-think-act categories for personal, family, employee and community responses.

### **Data Analysis**

Data, themes, and patterns were analyzed through the lens of Weick’s (2001) sensemaking theory and “look, think, act” model (Figure 7). The categories include: (1) what information was needed, (2) where the information was found, (3) the value or lack of value of the information, and (4) what information was needed but never obtained. Many areas of sensemaking emerged from the data as well as multiple instances of cognitive dissonance. It became clear that the closer the agents were to the actual crisis the less able they were to multi-task. The cognitive dissonance and information descriptions are highlighted in the next section.

Next, the data were reanalyzed to determine what action was taken by the study participants from the information gathered and (a) whether that action was what the participant would presently perform if placed in the same situation or (b) whether the participants would make different decisions if they had had different information available to them at the time of taking action. The next step was to follow the contacts

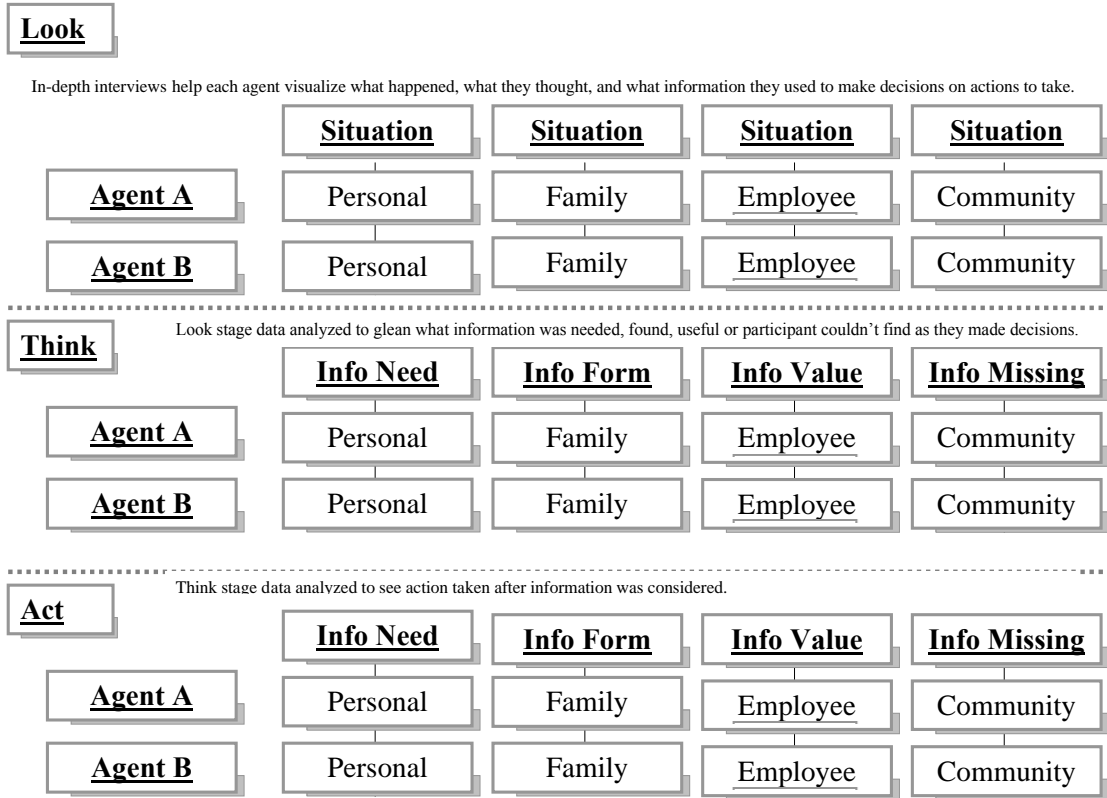


Figure 7. Data analysis design structure.

made with other KSRE agents in order to determine what help was rendered, whether the agent felt qualified/trained to help the Greensburg agents, and what suggestions the agents contacted would have if they had to do it over.

The final outcome of the study is a description-rich timeline of what happened, the information that was sought within the timeframe, and what actions were taken as a result of the information gathered.

## CHAPTER 4

### RESEARCH RESULTS

The data from personal interviews, observation notes, and document reviews provide a window into understanding how two KSRE employees in Kiowa County made sense of their situation on personal, family, employee, and community member levels. A description-rich narrative of what happened, what information was sought in what timeframe, and what actions were taken as a result of the information gathered follows.

#### **Agent A Prodromal Crisis**

**Personal.** This agent had experience with tornados prior to the May 4, 2007 Greensburg tornado. She indicated that in 1984 her hometown experienced an evening of tornados that included a wedge tornado bearing down on her home when a half of a mile from the house it turned and went the other direction. “I learned at a very young age that tornados are powerful. My Dad wanted me to see the power of a tornado so we watched a little rope tornado take a barn two miles from our house.” Because of her father’s instruction on the unpredictability and power of tornados, Agent A said she grew to be aware of storms in her area. She watches the sky, listens to radio and television reports and monitors radar on her computer for storm information. “My sister calls me a storm freak, but I’m not. I just want to know about storms, where they were, and where they were heading.”

**Family.** The agent along with her husband and two children lived just outside of Greensburg. Her daughter was just two weeks short of her first birthday and her son was four when the tornado happened. The evening of the Greensburg tornado the agent and her family were preparing for an upcoming family garage sale. They loaded both their

vehicles with items for the garage sale and prepared to drive into Greensburg to her in-laws' home. She had been listening to the weather reports on the radio and watching the sky so prior to leaving, the agent packed her child's diaper bag with extra clothing for the kids, medications, and important family documents. "It was my storm bag, and it had everything we would need if a storm hit."

As a family, they had discussed what to do in case of a tornado in their own home. Her son's preschool class had been practicing what to do in a tornado at school, and he had been sharing with his parents what he'd been learning prior to the tornado.

**Employee.** Extension has many storm-related publications and has trainings on the effects of storms on agriculture that this agent has attended. The agent also provided storm information to her clientele via a weekly column in the paper during appropriate times of the year. An agent's salary is made up of funds from the county commission, and state and federal dollars, and agents are called on to be a part of the county emergency management team. The Extension agents were charged with the emergency volunteer management, and this agent was selected as the public information officer. The emergency management team was focused on preparing a plan in case of a terrorist or bio-terrorist event after the 9/11 attacks. The storm related plans were secondary to the plans for a terrorist attack. In fact, as the committee continued to develop plans, "we joked that nothing would ever happen in Kiowa County. Never once did our team ever think we would actually be needed or activated."

Agent A said she didn't even take her role as Public Information Officer seriously until one table-top exercise where they were discussing a tornado hitting the local school. "A woman from a different county sat there and said, 'I'm a wife, mother, 911 dispatcher,

volunteer fireman and an EMT. When a situation like this happens, of course my first instinct would be my kids at the school, but I am part of a two-parent home. I have to communicate to my spouse that it will be his responsibility to make sure our children are safe and secure. At that time, my first priority has to be emergency management, and if I don't report to my job, other people can't do theirs."

It was in this moment of cognitive dissonance where Agent A was cavalierly thinking of the emergency management planning as simply an exercise that wouldn't be used that she was faced with the fact that because of her role she would have to put job and community first over herself and her family. "It wasn't until this woman stated this fact so plainly and simply that I actually thought about my responsibility of the Public Information Officer and that I might indeed be faced with a decision where job and community comes first particularly given that we live in Tornado Alley. Putting it in the storm context and away from the terrorist planning made me commit more clearly to this job and the responsibility that comes with it."

**Community.** Extension agents are encouraged to be engaged in their community and provide civic leadership where the opportunity arises. Agent A was on the administrative council for her church and board chair of the Sunshine and Rainbows Discover Center daycare and preschool prior to the tornado.

She described Greensburg prior to the tornado as a typical rural community that was "dying a slow, agonizing death." She said, "There were young adults, young families and jobs leaving the community. The older generation was dying. We were watching our community struggling to stay alive."

Agent A said the communities within Kiowa County operated independently of each other. The allegiances to each community was strong so there was little countywide collaboration. For instance, she pointed out that the only time county and city governments communicated was at the annual renewal of the law enforcement contracts. Each city contracted with the county for law enforcement so once a year the sheriff would negotiate a contract with the city councils for the county government to approve. She added that there was no discussions between the three school districts for fear “the big C” (consolidation) would be brought up, and each institution, business and civic organization worked independently on projects and programs, many time causing the “reinvention of the wheel syndrome” to occur. “Greensburg and the rest of Kiowa County had strong rural traditions similar to most rural communities. Their ties run deep. Change is not openly accepted and is even feared by many.”

The one area where there was countywide cooperation she pointed to was the Kiowa County Ministerial Alliance. She said 70% of the county churches were active in the organization. The focus was the spiritual development of the community as well as overseeing the food bank and second hand store in Greensburg. The money generated from the two businesses was used to provide financial support to local people in need.

### **Agent A Acute Crisis**

**Personal.** Just prior to the actual tornado, this agent was at her in-laws’ home. She and her husband had each driven one of their vehicles loaded with items for a family garage sale. The police scanner was on, and she could hear storm spotters talking about the straight-line winds. The spotters were relaying that they didn’t feel safe at their present location which was in Agent A’s driveway outside of town. Agent A said she thought at



that point they would have some damage to their home and she was glad her family was in Greensburg away from the brunt of the storm.

The family was in the kitchen having pizza when the storm sirens went off. When that happened, Agent A said she told herself to remember what she knew about tornado safety and to remain calm for her children's sake. She said that she was calm because she knew that she had prepared for a tornado by packing the diaper bag with everything she thought she needed. She said she also thought this would be like so many other times when they had gone to the basement and nothing happened to them. In recalling the events, this agent is calm and showed no signs of emotion or distress.

**Family.** As the sirens sounded, Agent A picked up her daughter, put the diaper bag over her shoulder, and took her son's hand. They went to the basement and were in an outer room with windows. Agent A said their ears were popping, and she told the family they needed to get in a room without windows. She also asked her mother-in-law to get blankets so they could cover up and avoid flying glass.

In addition to Agent A's family and her in-laws, the young neighbor next door was also in the basement as her house didn't have a basement. The neighbor had a young daughter. Her mother-in-law directed everyone to the storage room. "Once in this room, I was reminded of a vivid description that my cousin gave of being in their storage room when the tornado hit in her hometown in 1984. She said she was watching everything getting literally sucked out of the basement so she was knocking canned fruit and vegetables off the storage shelves so she could get under the shelves. She didn't want to get sucked out of the basement."

At that point the agent handed the diaper bag to her husband and told him to hold on to it very tightly and not let it go. She told her son to get in the position he'd learned in school from the tornado drills, and then she put her daughter on the floor. The other young mother did the same. They then laid their bodies over the children. By this time, the tornado was starting to destroy the house.

“My whole thought at this time was if the floor above us goes, we could be sucked out of the basement. I prayed to the Lord that if the floor went to please make me strong enough to hold onto my children. That is all that I concentrated on until it was over. She said she could hear wood shredding and then a big whoosh of air as the roof was lifted off the house. When that happened, air was forced through the air ducts of the house choking them with dust.

“There was a horrible smell with the tornado along with the roar that people talk about. It is a sound and a smell that I'll never forget. One person said it was the smell of evil. You just can't describe it.”

Everyone in the basement with the agent that night survived without injury. The agent lost both vehicles in the storm and her home in the country was heavily damaged by straight-line winds. The home wasn't damaged so much that they couldn't live in it so they had a place to go after the storm. In addition, her husband's parents and two other couples made their way to safety at the agent's home.

**Employee.** Immediately following the tornado, the agent knew she needed to report to work to fulfill her emergency management duties. “I looked at my husband and said I had to go to work. He told me that I wasn't going anywhere until he could find the rest of his family in Greensburg. I was torn. I knew I needed to go to work to help out, but

I also understood the need to make sure family was okay first.” After her husband dug his grandparents out of their basement, found his sister and her family, and found a vehicle to drive everyone to their home in the country, Agent A was finally able to report to work.

As emergency personnel were arriving from nearby towns, community volunteers had already begun searching for survivors and trying to help the injured. “We were staging in the Dillons Food Store parking lot. We were logging in people so we would know who was missing and who we needed to look for in the rubble.” It was from this site that people were then shuttled to shelters in nearby Haivland or Mullinville, or if they were injured, they were put in ambulances and transferred to the hospital in Pratt, which is 30 miles to the east of Greensburg.

This work continued all night and into the following morning. “At some point, I was told that the courthouse that housed our Extension office was still standing, but water, wind and debris had caused considerable damage. I knew that to be able to help people in the coming days, I would have to rely on my training and what I knew off the top of my head. I was confident that I could do that because of prior Extension training.” Agent A said the trainings were generally day workshops on such things as hazardous waste removal, dealing with mold issues, and health and safety concerns when dealing with storm damage. In addition, state Extension specialists create publications that are available to the agent in print and online forms.

**Community.** Almost immediately help began to arrive in Greensburg. Much of the help was from Greensburg residents who had made it out of their homes unharmed and Kiowa County residents who lived nearby and weren’t as affected by the storm. Because the tornado happened in a rural farming community, large equipment was readily

available to help clear the streets so emergency vehicles could pass. The county's equipment for such tasks was destroyed in the storm. Agent A said there were downed lines everywhere, and she added that "One of the wisest decisions that was part of the emergency plan made prior to the storm was to turn off all power and gas. This one decision kept people from stepping on live downed electrical lines or gas explosions in homes."

The agent said that even though they had been working on the emergency plan for Greensburg she was amazed at how many things it didn't cover. One of the main things was the inability to communicate with each other. Cell phones weren't working, there was no TV or radio, and no Internet. "We were working with two-way radios and word of mouth to disseminate information to citizens about where to go and what to do. This was a time of great need for information. Many were scared and had no idea what to do and where to go when everything they had was just destroyed. They couldn't call 911 so they had to help each other care for the injured and look for ways to let people know emergency crews were needed and where. Remember, everything was destroyed so there were no street signs or landmarks to guide people. We had to rely on each other and the skills that we brought to the crisis. We had to solve problems together, and do it quickly. I'm proud to say that we did it well considering what we were facing."

### **Agent A Chronic Crisis**

**Personal.** While Agent A did not lose her home, her home was heavily damaged by straight-line winds so she, like most Greensburg residents, was looking for someone to do repairs and making decisions about her home. In addition to her family, she had three couples living with her for an extended period of time. Two couples moved out in August

of 2007 after living with the agent for four months. The other couple moved out in December of 2008. These were people who needed help in making contacts with the assistance they needed to rebuild their lives as well as their homes. The agent said she felt responsible for all those living in her home and spent many hours helping them get back on their feet in addition to dealing with her own family, work, and community responsibilities.

Because Agent A didn't totally lose her home, some thought that she had more time to give to her work and her community. In fact, she was dealing with the same issues as her fellow Greensburg residents. "I was trying to repair our home. I was trying to help three couples find the right direction for their new lives that included building new homes. My office was affected. My church where I was on the administrative council was destroyed. I was the chairman of the daycare and preschool that was destroyed. My child went there so I had to find additional daycare. Every part of my life was affected."

**Family.** Prior to the tornado, her husband's family provided childcare support for the agent who worked many weekends and attended many evening meetings each week. After the storm they were unable to provide that support. Her in-laws were one of the couples living with the agent and tried to provide childcare for her; however, they decided they couldn't do it because of the stress they were under. The agent hired a teenager to watch her children.

As the agent moved into working with the community to rebuild, she spent very little time with her family. When asked what gave while she was helping make decisions regarding rebuilding a church, daycare, preschool, serving as the Greensburg public information officer and fulfilling her role as an Extension agent, she simply said, "My

kids.” Interviewee (P1) who was also working to rebuild Greensburg said, “Those of us who were working hard on the rebuilding were neglecting our families. I was not a good Dad. I was not a good husband. My wife said she felt like a single mother. It was a tremendously difficult time for all of us.”

**Employee.** In the days following the tornado, one of the most pressing needs the community had was to disseminate information about services offered, town rules and regulations for safety and security, and about each other. The prior communication infrastructure was gone. Cable and electrical systems were destroyed, and logistics generally prevented radio and television stations and newspapers from filling the communication void. Cell phone coverage was extremely limited.

As the public information officer, Agent A spent countless hours writing, editing, and disseminating information. The agent gathered information by attending the daily morning update meetings that included FEMA officials, representatives from City Government, the Extension agents, and emergency representatives from churches. It was determined the best way to get information to residents was via a daily bulletin titled the *Yellow Sheet*. The name came from the fact that yellow paper survived the storm in the Extension office and that is what Agent A used as copy paper for the bulletin. The *Yellow Sheet* was published daily for four months following the tornado, and is still published weekly today. The *Yellow Sheet* is also available online now.

Distributing the *Yellow Sheet* was done by leaving it in staging areas, shelters and personal delivery as the agent walked through town visiting with those cleaning up after the storm. This walk-and-talk time allowed the agent to answer questions from residents. The information in the *Yellow Sheet* was also transmitted via seven emergency radio

towers provided by FEMA. The process for accomplishing this was time consuming. After the *Yellow Sheet* was published and distributed, the agent dictated the copy into a voice recorder and then downloaded the audio to each of the seven towers. This process alone took the agent an hour and a half a day to complete.

Interviewee (P20) said, “You know, I don’t think any of us appreciated how much time and effort went into producing so many issues of the *Yellow Sheet*, or how much we relied on the information that we gleaned day to day during the recovery from it. It was a tremendous service and was like none other.” Interviewee (P21) added, “At first, there was so much information we needed, and it was in the *Yellow Sheet*, but we didn’t have time to read it all. I think they realized that and made the information much shorter and more to the point. It was much more helpful then because we could quickly read it, and gather information. Anything that took a lot of time during that time was stressful and not helpful.” Interviewee (P22) said, “The *Yellow Sheet* could have been called the *Life Line* during those first few weeks. It was so important to all of us.”

The Extension office was located in the courthouse at the time of the tornado. The building survived but was damaged and couldn’t be used until the structural damage was repaired. The Thursday following the storm, the agents were told they had to clean out the office of the debris and remove any items they could salvage by the end of curfew the next day. Agent A made a quick cell call to neighboring Pratt county Extension agent asking for help for the move. Thirty seconds was about all the calls would last during the early days of the storm recovery. This agent called in others to come help.

Agent A gave instructions where to meet because she had to be there to get the helpers past law enforcement and provide volunteer identification for them. The city was

under marshal law at the time and only local residents were admitted. Residents were allowed to bring in help, but the volunteers had to have identification and each car was marked with the number of occupants, the address where they were to be helping, and if the vehicle was found away from that area it was removed. The curfew was from 8 a.m. to 6 p.m.; however, Agent A was allowed to enter Greensburg earlier and leave later because of her part on the emergency management team.

It took Agent A and the team of Extension agents the entire day to clean out the offices. The Extension office was then housed at a temporary site in nearby Mullinville. Three other moves occurred until the Extension office was given a permanent home in June 2011.

Extension agents in surrounding counties couldn't enter Greensburg to answer questions from residents to relieve some of the pressure from the Kiowa county agents. They did set up a booth in the Haviland at the shelter area to help. Agent A said this was helpful, but she found it interesting the number of people who caught her and told her they had talked to the agents in the Haviland booth, but they wanted her opinion on what they learned.

Agent A relied on tacit knowledge and prior training to answer questions immediately following the storm. Communication to the outside world and resources in the days following the tornado was virtually nonexistent. "I was grateful for the prior subject matter training that I drew on to answer questions. There were a lot of household questions, like how to deal with mold, how to get things clean, food safety questions, and where to get items restored, such as heirloom quilts and photographs. Mainly it was how to get things clean. To get rid of what the community started referring to as 'tornado



puke.’ It was fiberglass, paper, mud, leaves, and board all combined into a plaster-like substance that was hard to remove.”

Within two weeks, Extension administration in Manhattan had collected previously printed publications on storm recovery and brought them to Agent A’s home so she could distribute as needed. Once phones were reestablished, the KSRE Manhattan Administrative team had weekly conference calls to determine what the needs of the agents and the community were and then worked on meeting those needs. “This brought the full resources of the Kansas State University Research and Extension to Greensburg. It is the mission of Extension, and during the recovery period, many facets of the University joined forces with Greensburg residents as we rebuilt. This was good for Extension and good for Greensburg.”

One of the many examples of Agent A’s involvement in bringing KSRE resources to Greensburg was replacing trees in the community. Early on, Agent A and the state forester volunteered to handle all tree issues from donations to selecting appropriate varieties, and care and planting for the city. They were also available to any resident who needed assistance. Interviewee (P6) said, “This was a relief to those of us trying to put the city back in place. We knew that we had the best people giving advice and making decisions for us, and it was one big item that we could take off of our very long list of items that needed our attention. The work they did will be here long after we’re all gone, and it wasn’t only the trees. K-State Extension was our partner on so many fronts.”

Another area that Extension played an important role was in assisting in creating the plans to rebuild the city. Agent A was on the Community Recovery Action Team and involved in all three aspects of this process. First, Governor Kathleen Sebelius asked

Terry Woodbury, Director of Kansas Communities, to join FEMA in the recovery plan. Kansas Communities works with leaders in communities on a process called Public Square. As Agent A described it, “Public Square is a development approach that focuses on asset-based conversation, citizen engagement and partnerships among leaders in business, education, health and community services, and government. Those four sectors make up the Public Square.”

Normally, the process is done in four phases over a two-year period, but the process was accelerated in Greensburg. The process includes one-on-one interviews to identify community assets, a community conversation with citizens generating long-term development ideas, a vision retreat with citizen-nominated leaders producing community goals, and citizen-driven action teams implementing community goals are coordinated by a Public Square steering committee.

Greensburg and Kiowa County residents met weekly with an average attendance of 25 people. Meetings focused on community issues, opportunities, and vision statements for the areas addressed in the plan. The Public Square process took three months, along with the Long-Term Recovery team from FEMA to complete the Long-Term Community Recovery Plan. The vision statement that emerged from the process is “Blessed with a unique opportunity to create a strong community devoted to family, fostering businesses, working together for future generations” (Long-Term Community Recovery Plan, 2007, p. 1).

Agent A listed the projects receiving high priority for the plan as:

- rebuilding city and county buildings,
- rebuilding schools and expanding educational opportunities in the county,

- developing diverse and affordable housing,
- rebuilding medical and emergency facilities,
- creating a business incubator,
- expanding the lake area,
- relocating the fair grounds;
- develop a Kiowa County museum and tourism center,
- rebuilding downtown Greensburg, and
- develop a community leadership program.

The process was considered successful; however, Agent A remarked that it was like any committee work in that there were moments of chaos and frustration as people worked through the steps to complete the plan. She listed one benchmark for success as “FEMA was impressed with Public Square and has now permanently changed some of their protocols in working with communities immediately following a disaster to include items from the Public Square process.”

Kansas Communities and Public Square have received wide recognition for the program, prompting a company name change to Public Square, LLC because now they are serving communities across the United States. Demand for Agent A to do public presentations about her experiences in Greensburg before Public Square community participants remains high. Interviewee (P10) said, “The Extension service has a great deal to offer communities and is often an unknown resource. Agents across Kansas have been an important part of Public Square conversations.”

The *Long-Term Community Recovery Plan* (2007) was designed as a guide for the community to use in rebuilding. The plan has four sections: sustainable (green)

development, housing, economy and business, and community facilities and infrastructure. It includes a list of contacts and resources for community leaders to draw upon. In 2008, the city council decided it needed additional help in carrying out the plan so they hired BNIM architects in Kansas City. Leaders from the firm along with city council members, the Long-term Recovery Action Team, and community members built on the Long-Term Community Recovery Plan (2007) to create the *Greensburg Sustainable Comprehensive Plan* (2008). This plan addressed downtown rebuilding, walkability, built environments, hazard mitigation, economic development, energy, transportation, carbon, and housing.

Interviewee (P12) said, “We came to rely heavily on (Agent A) and her contacts through Extension. At first we would be discussing a topic, and she would say that she could contact a specialist in that area to help. After awhile, we’d just turn to her and say ‘what specialist do you know and can you contact them?’. The beauty of the help she brought to us was that it was based on the latest research and it was unbiased. Because Extension is nationwide, the Kansas specialists often brought in specialists from other states to provide expertise. No one was trying to sell us anything. They were trying to educate us and help us find the right questions to ask as we started looking for ways to solve problems. On top of all of that, their services were free, and that was a huge benefit to us at that point.”

Agent A was proud of the services she brought to the process but also somewhat disheartened. “People would remark on the leadership I was providing, and I didn’t see it as anything special. This is what I did before the tornado and is simply my job. The other

agent in the office and I joke that we're the best kept secret in town, and in a small town, that's really saying something."

**Community.** The political climate in the city government was in transition during the rebuilding timeframe and that added to challenges faced by the community and those employed to focus on rebuilding Greensburg. Extension personnel are encouraged to remain neutral in county and city politics. Agent A said the mayor of Greensburg at the time of the tornado resigned in the early days of the recovery and was replaced by an individual who was moved up to the position and not elected. He led the community through the decision to go green and then was not elected mayor in the next election. Fifteen people ran for city council and four new council members were elected.

Interviewee (P6) remarked that it was one of the best elections in years because normally they are recruiting people just to get names on the ballot. According to Agent A, "The biggest question was whether the new mayor and new city council members would follow the recovery plans and especially going green, or if they would lead the community in a different direction."

The outgoing mayor tried to extend the city manager's contract prior to the installation of the new mayor and council members. Some current members argued that that decision should be left to the new mayor and council. Agent A commented that it was democracy in action. "While the support for the city manager was high, members of the outgoing council felt the decision should be left to the new administration. When it came time for the vote on the contract extension, one council member resigned so there wouldn't be a quorum present, and the vote couldn't be taken. In the end, it worked out

fine as the new administration did vote to continue to go green and to extend the city manager's contract.”

### **Agent A Crisis Resolution**

**Personal.** Looking back over the past four years, Agent A said, “You know, I’ve questioned my own emotional well being because I never cried because of the tornado. I have been sad. But everyday, we would have people who would drive into town that would cry buckets of tears. My co-worker struggled, and she hated coming to town. I just came in and did my job. It was never overwhelming to me.” The only time Agent A showed any hint of emotion during the interviews was when she was talking about how the tornado affected her children, and then her eyes glistened for a moment or two, and she regained her composure. Agent A doesn’t believe they’re in the total recovery stage yet. She still drives to Dodge City or Pratt for larger grocery shopping trips and many services.

**Family.** The tornado was difficult on families, and Agent A’s family was no exception. She said she gave so much of herself that there was often little left for her children. Her children were sleeping in their own beds prior to the tornado, but after the tornado, they didn’t want to sleep alone. Storms and basements still frighten her children. In addition, Agent A’s marriage dissolved so she is now a single mother of three. She said the tornado wasn’t the primary reason for the divorce, but “it didn’t help.”

**Employee.** Agent A indicated that she thought she was well prepared to handle her job in the wake of the storm. She said administration supported her and Agent B and assured them they would have a job immediately after the tornado. The conference calls allowed her to bring needs to the table, and those needs were met. When asked what is the

one thing she wished Extension administration could have given her to make her job easier, she responded with “time.” She went on to explain that time for her wasn’t something administrators could give because the work at the beginning was never ending. “I needed to get information to people quickly and on a regular basis. Extension couldn’t have sent anyone in to Greensburg to take my place in the first few days after the tornado because of the marshal law, and after, I needed to help my customers because we already had relationships established. They were dealing with the aftermath so there was no reason that I shouldn’t be there with them. It was exhausting work, but we were all in it together. I think I just kept plugging away, and I don’t think I really noticed especially in the first year or two.”

**Community.** Agent A said that the community isn’t completely recovered. “FEMA told us during the Public Square and planning meetings that it would take ten years for the community to recover. It’s what they’ve seen with other places that have been struck by a natural disaster.” As Agent A worked on the recovery efforts, she said she and other community members joked about how rapidly things change. She said they learned that you have to “roll with the punches sometimes.” She added that they learned that you have to “pick your battles” carefully. As a community, she said she thought they learned that change isn’t always a bad thing, and that it can also bring opportunities. “The opportunities aren’t all negative, and if we view them negatively then we’re shorting ourselves. If we can look at change as a positive thing and as a way to grow as individuals then it becomes something exciting instead of negative.”

She also said that she thinks that because of the tornado Greensburg is becoming a thriving rural town that is not dying a slow death as many other communities are doing.

“We have found a new enthusiasm for our community. I see community pride where before I heard a lot of complaints. None of that would have changed.”

One local businessman (P15) agreed and said that they owned a farm implement dealership. They rebuilt green and used wind energy for their power source. He said as they learned about how wind energy is harnessed they decided they could help home and business owners in the community set up systems. From that one idea of service to the community, another branch of business was created, and now they install wind energy systems in all of the United States and into Canada.

Agent A said another important factor from the tornado was the realization from the community that the Extension service was one of providing information. The new Extension office is housed with the public library, the historical museum, and the citizen media center. “We housed all the county informational services in one building for easy and faster access” (P12). “One thing about K-State Extension is that they were there from day one, and four years later they are still with us. All the other universities helped us, but K-State is the only one that is still here with us” (P11)

### **Agent B Prodromal Crisis**

**Personal.** This agent lived in the Greensburg city limits. Her adult daughter and her three children also lived in her home. Agent B also had prior experience with tornados. She described a tornado that occurred when her son was small when they were living on a farm. “The Greensburg 2007 tornado was the second major tornado that I’d been through. We were in one when my son was little, and it took the out buildings around our farmstead. We had big cross-country power lines on our property, and it sucked those poles out of the ground. It turned the irrigation systems over. I saw and heard the power



and sheer destructiveness of a tornado. Tornadoes are unpredictable, and I respect them and always take necessary precautions when I hear one is in the area.”

**Family.** The day of the tornado Agent B had been listening to radio and television reports of the potential of a storm in their area. She said she and her daughter decided that they would put the kids to bed in the basement instead of the upstairs bedrooms so they would already be downstairs if the tornado sirens would happen to go off. “My grandkids know that when a storm is in the area it’s Grandma’s rule that you go to the basement. We always talked with the kids that you need to be aware of the weather, and that you need to go to the lowest level of your home. My grandson was seven at the time of the storm and had been practicing tornado drills once a month at school.”

Agent B also said their family talked about what to take with them to the basement. “We said that you must have shoes and take any medicines you need to the basement. Medicine is particularly important in our family because my granddaughter is diabetic. We talked about having provisions and important documents with you in the basement.” The evening of the Greensburg tornado this agent had a waterproof lockbox with all of her important papers with her in the basement. She also said a duplicate set of all the documents in the box were also in her safety deposit box at the bank.

**Employee.** This agent said it was important to annually inform the public about what to do in a tornado. She said it’s not only a good reminder for those who are familiar with Kansas storms, but it is also critical for new families that have moved to the area and aren’t as familiar with tornado weather. She admitted that they didn’t have a lot of new families move in, but was definite that the information should be disseminated annually. “I do a news column each week for the local paper, and I always do one about being

prepared in the face of a deadly storm.” She also said they provide information about food safety issues that arise during storms such as what to do with food in a freezer when the power goes out.

Agent B was also involved in the emergency planning meetings that Kiowa County was conducting prior to the 2007 storm. “There was an older document that needed updating, but we had a person who said I wrote this and it’s my manual and refused to share it with the county team.” They went around him to obtain copies and then forwarded it to all the county departments and personnel for updating input. “We said that we need to start talking about what we’re going to do if we have a major disaster in the county.” One area that Agent B worked extensively on was the health and wellness section. This included working with the hospital on an evacuation plan, and this would later prove to be a wise precaution because the hospital was destroyed in the tornado. They had completed the drill several times prior to the tornado when other storms caused the storm sirens to go off. “They had done this several times, and it had been false alarms. Even though there was some grumbling, the hospital said you have to do this every time. Training prior to a major disaster is critical.”

This agent also pointed out that it was fortunate that the tornado happened on a Friday evening because that is not a day of the week that there are normally Extension meetings planned. “We realized after the tornado that we don’t have a policy for how we deal with storms that might occur during our meetings.” In the case of the Greensburg tornado, she said it happened late enough that meetings would have been adjourned. This would have put everyone on the road home at about the time the storm was hitting Greensburg.

**Community.** Family, faith and school are the three things Agent B listed that are important to the Greensburg community. The churches have a long tradition of providing help and support to community members. Churches also have the most experience in helping during a crisis because of their worldwide outreach programs. “This is a community where neighbors help neighbors. It is something that is taught to young family members at an early age. It’s part of what makes living in a small rural community special.”

Community members, including those without children, are actively involved in supporting school activities. It was an unusual Friday evening in Greensburg because there was not a sanctioned school activity the night of the tornado. The forensics team was the only school group with an activity, and they were in Salina for a competition. “We were fortunate that we weren’t all at the high school that evening.”

Agent B said it is interesting that as much as this small community helps each other on an individual basis that it worked so independently in organizations and city and county government departments. School districts did not work together for fear of causing a consolidation movement. Change, she said, is not something that was embraced in the community.

### **Agent B Acute Crisis**

**Personal.** This agent stated at the beginning of this interview that talking about the tornado was painful, and she warned the researcher that she would cry as she told her story. She said she is willing to share what happened so that others may learn from her experiences. Agent B was overwhelmed with the feeling of responsibility she felt that night. She said she had responsibilities as a daughter, a mother, and a grandmother. All

three of her grown children and families lived in or just outside of Greensburg. Her father had a farm nearby. The inability to communicate just prior to and after the tornado was particularly stressful for this agent. “We couldn’t call, and we couldn’t get storm information because our satellite TV lost the signal with the storm. We were cut off completely.”

**Family.** On the evening of the tornado, this agent, her daughter, and her grandchildren had dinner, and were getting ready for bed. They made the decision to put the kids to bed in the basement since weather reports were for storms in the Greensburg area. “We didn’t want to have to wake the kids up and take them to the basement. We thought it would be better to just let them sleep downstairs.”

Agent B then described the phone call she received from her son asking her where she was, and she said she was in the basement. At this point in the interview, the agent begins to cry. She says just talking about this is very painful and emotional for her. She said her son worked for the city and had a two-way radio and could hear the storm spotters. Her son said there was a really big storm coming, and they needed to be in the basement. Her son wasn’t called out for any city work prior to the storm and was in his basement with his family.

The agent was in the basement when the sirens went off, and she realized that she hadn’t taken her granddaughters insulin to the basement with them so she ran upstairs to get it. She got back downstairs and told the kids to cover up to shield them from flying debris. “When you’re in this situation, you don’t know how you’re going to act. We tried to be calming for the kids.” As the storm struck, the agent described the sound as a sound of a train coming. There was large hail, strong winds and heavy rain. She said she told her

daughter when their ears started popping that the tornado was there. “You could hear it taking everything away, and the smell was unbelievable. You smelled all the dirt, the oil and everything that the tornado had picked up. It’s a smell that is unforgettable.”

Because the storm was so large, there was an extended period of calm and quiet after the first hit. The agent said that was the eye of the tornado. It was during this time that her daughter realized they’d left the dog in her crate upstairs so she ran upstairs to check on it. The dog had survived because she was in a narrow hallway, and a coat rack fell on the crate so the coats protected her from flying debris. The rest of the house was demolished. Her daughter let the dog out, and they both ran back down the stairs. Her daughter said there was another tornado coming. It was really the backside of the storm. They heard more of the house being demolished. “I know it was only twelve minutes, but it seemed like an eternity, but we were all okay,” she said. We tried to go upstairs, but we couldn’t get out. My daughter managed to break a window and climb out. She ran to check on her grandmother who lived nearby. When she got there, her sister was there. Her sister lived just outside of Greensburg, and their home wasn’t hit. She was taking the grandmother to the farm, and said she’d return for her mother, sister and kids.

Meanwhile, still trapped in the home with her grandchildren, the agent went upstairs in search of a pair of shoes. She said that she knew that she should have had on shoes, but when the tornado is coming some of the practical things you learn about preparing for a storm are forgotten. While upstairs, she heard someone calling her name. She yelled that they were in the house and couldn’t get out. Volunteers made their way in and created a way out for the family. The volunteers were from nearby Mullinville and

had come to Greensburg as soon after the storm as they thought was safe to help get people out of the debris.

“At this point, we didn’t realize how bad the storm was so we thought we’d walk to my son’s house and stay there. We saw people walking, and they looked like zombies because they were in shock. Many were lost because all the street signs and landmarks were gone. They would ask whom we were and if we were all right. They’d ask about loved ones if we’d seen them. We saw a poor horse in the middle of town that was hurt and looked bewildered. I don’t know how that poor horse got there,” she said through tears.

Her daughter in-law found them as they were making their way to her house. The agent told her that they were going to their house to stay, but the daughter in-law said that they couldn’t because their house was destroyed too. Her son was helping dig people out of their houses. The agent’s daughter made it back from the farm with a young man from Haviland who had come to help. He drove the agent and her family to her daughter’s house. He ruined the transmission in his truck in doing so, and it was not replaced by insurance. “I knew I had to help when I looked at the total devastation around me. I knew I had to go to Greensburg and help where I could. That’s what we do here. We help our neighbors” (P4).

The agent said it was almost 3 a.m. when they made it to her daughter’s home. At that point, both her daughters and her son in-law went back to Greensburg to help. She still didn’t know how her father was at this time.

**Employee.** Once the agent was safe at her daughter’s home, she said she felt torn. She knew she should be doing her part with the volunteers on the emergency management

team, but she was the only adult left with six small children. “I knew I was needed to watch the kids, but I also felt a responsibility to the emergency management team. I just couldn’t leave the kids.”

She said in looking back, she realizes it was unrealistic for the planning team to expect that everyone would leave his or her families and report for duty. “We know now that people will make sure their families are safe and then they will come as soon as they possibly can get there.”

**Community.** The emergency planning team had some things to be proud of and many more to be thankful for, according to Agent B. The hospital evacuation plan worked. All patients survived the storm in the hospital basement while the hospital was demolished by the tornado. The agent said they were thankful that the tornado didn’t happen during school hours because where they told students to go in the interior hallway wouldn’t have been safe. “If the kids had been in the hallways, it would have been like they were in a blender. There was glass and debris everywhere. We would have lost a lot of students and faculty.”

In general, Agent B said the reason so many survived the storm was because of prior planning and training. The ones lost were because they couldn’t or didn’t get to a shelter, or they were in a shelter and the debris crushed them. She said it was fortunate that most people were still awake and hadn’t gone to bed. She believes more lives would have been lost if it had happened after most had gone to bed. She said one gentleman died because he went to bed after taking a sleeping aid and didn’t hear the storm sirens. “The fact that a tornado emergency was issued as opposed to just a tornado warning got

people's attention and caused them to act" (P2). There were other wise decisions like cutting the power and turning off the gas. "That saved lives too" (P3).

According to Agent B, "The staging area was in the Dillons parking lot and the morgue was in a nearby bar. The emergency management team ordered 300 body bags in anticipation of what the need would be, and we were so lucky that we didn't have anywhere near that number of fatalities."

While the human loss was low, the animal population wasn't so lucky. The Pratt County Humane Society cared for the animals rescued along with a group of volunteers lead by Dr. Christen Skaer, a Wichita area veterinarian and a 1999 Kansas State University School of Veterinary Medicine graduate. During a public presentation at Kansas State Univeristy, Skaer (2011) said, "The animal first responders arrived in Greensburg at about midnight following the tornado, and we were amazed at the spirit of neighbor helping neighbor. We also realized that the human response had to come first, but later we would come to realize that to help humans you also have to help the animals.

Skaer told the audience that the animal response team found the animals that had already been rescued in the fenced in yard of the Kansas Department of Transportation building. The facility was fenced, and there were about 30 to 40 dogs and cats that had to be put over the fence and left running loose together.

At the time, the Kansas State Animal Response Team wasn't in existence. The organization had bylaws, but no emergency plans in place yet. We called the Pratt County Humane Society and asked if we could help. They were happy to have us help. It's important to be asked to come into a community to help because just showing up with no training causes problems for all. We call these people



spontaneous unaffiliated volunteers. They are there because they want to help puppies and kitties. (Skaer, 2011)

Animals that have been through a storm behave differently than they did prior to the storm. This makes it difficult for animal rescue teams when deciding how to treat the animals.

They are frightened, hurt and guarding their owners so we need volunteers trained in how to handle animals in this situation. It is also very hard to tell the difference between a domestic cat and a feral cat at this point. I realize now my colleagues and I made a mistake and probably euthanized two domestic cats. We should have given them more time to calm down and to show us that they weren't feral before we euthanized them. (Skaer, 2011)

Today, the group is writing job descriptions so that there are volunteers trained in specific roles such as animal shelter managers, triage veterinarians, search and recovery, and unification. They are also looking for ways to utilize the services of the spontaneous unaffiliated volunteers so they feel useful and are actually helpful to the process and not detrimental.

Skaer told the audience that the animal response team encountered many things for which they had not planned, including additional tornado warnings. The human responders were taken to the courthouse basement, but all the animals had to be left in the makeshift shelter. "This wasn't a good situation, but we didn't and still don't have a good answer to that. It happened to us at the Reading, Kansas tornado on May 22, 2011 so we're researching alternatives" (Skaer, 2011).

Another lesson she said they learned was in regard to the actual search for missing or injured animals. “We did have a team doing animal search and recovery that was going house to house. We have since learned that if we weren’t asked to go to the home we couldn’t go in because it was private property (Skaer, 2011).

There were also safety concerns because there are few, if any, animal rescuers who are trained in how to safely enter a structure that has been severely damaged by a tornado.

We did go into homes when we shouldn’t have and in a crisis situation when you aren’t trained you have a cavalier attitude that you’re indestructible and you can help anyone at any time. It’s not true, and you really need to step back and follow established plans and protocols. (Skaer, 2011)

There was also the issue of downed power lines. The power was off in Greensburg, but teams have to be trained to respect the lines as if they are powered. Stepping on nails was a hazard in Greensburg and is in any tornado disaster.

One of the best things to come out of the Greensburg tornado was the partnerships we formed. We now have a good relationship with the Red Cross, and now we’re working with canine search and rescue teams that actually go out and look for human victims. Because what they find is that when they go into a house that has a dog that is a pet that dog might guard the owner and not allow the search and rescue team to get to the human that needs assistance. The canine teams have requested an animal rescue team to go in with them to care for the pet dog. This also helps in identifying who owns the dog, and after the human has recovered the dog and owner can be united. So these are things that the Kansas State Animal Response team is working on. (Skaer, 2011)

Equipment was another critical need of the animal response team in Greensburg, and veterinarians purchased crates with their personal funds to house the animals.

We also didn't have a quarantine area. We had many animals that weren't vaccinated or spayed or neutered. We needed an area to separate animals, and we didn't really have that. We didn't have a place to keep veterinary supplies. Well, first we didn't have supplies. I cleaned out my clinic, and that's how we got supplies. (Skaer, 2011)

Communications was also a big issue for the animal response teams. They did not have two-way radios and phones did not work well.

A lot of funny things happened on communication. There were reports of anhydrous ammonia leaks, and first we should evacuate and then we shouldn't so I went up to a FEMA representative that was a great big guy and asked if we should evacuate, and how I would know if I should. His reply was 'little lady, if you see me run, you run,' and that was our form of communication for evacuation. (Skaer, 2011)

Supplies showed up, and this was right after a major pet food recall. This complicated the rescue teams job, and it was an additional burden on those that were working with donations. The other problem with all the donated food is that the animals were being fed different foods everyday so there were profound gastrointestinal issues.

We received lots of recalled food, expired pet food and all from well meaning people, but it only added to the chaos we were dealing with and it becomes a disaster within a disaster. Donation management is another whole aspect of the

animal response mission. Frankly, it was a real mess to deal with everything that showed up. (Skaer, 2011)

The diseases they dealt with were Parvovirus in dogs, upper respiratory disease in cats, heat stroke, penetration wounds and lacerations, crushing injuries, gastrointestinal upset, and parasites. One family found their pet cat that had been missing for eight days while they were going through the rubble of their home and came upon a filing cabinet. The cat had been in there for eight days of near 100-degree temperatures. “The cat had a temperature and dehydration, but it did survive. There were many animals that needed care, and in future disasters, I just want to be a veterinarian, and that’s why we’re training volunteers to deal with the other issues” (Skaer, 2011).

Another area that needs to be communicated to the public prior to a crisis is that of animal identification. During the Greensburg recovery, the animal response team had many animal tracking issues. There were dogs wandering the streets.

You could hear dogs barking, and as a veterinarian, I could say there is a Beagle because I know what they sound like, but you could find them by following the barking. The rest of the town was so quiet. Animals were locked in houses. There was a woman that left her house with her dog in her crate. She kept coming in everyday looking for her dog at our shelter, and she was mad that we didn’t have it. The dog’s name was Batman. I wasn’t smart enough at the time to get her information so I could contact her if the dog showed up. She said she was leaving Greensburg and wanted her dog back. About thirty minutes after she leaves, a woman came in carrying a dog that matched Batman’s description, but I didn’t have this woman’s information to get her dog back to her. I felt awful.

So we were driving back to Wichita that day. We drove back and forth every day because there was nowhere to stay. We stopped at a taco shop in Pratt, Kansas to get food, and I see Batman's owner standing across the taco shop, and I screamed at the top of my lungs that I have Batman. Everyone in the place was in tears because she got her dog back. That's really what it's about.

I was dumb at the time, but I'm not going to be dumb any more during a disaster. We can actual track animals now instead of counting on the luck that the owner will show up at Taco Pronto. We didn't have a good identification system for animals at the time. Information was written on scraps of paper in someone's pocket. We're working on better systems because I can tell you if you get an animal back to a person, it's a big thing to that owner.

If your house is gone, your car is gone and potential even family members are gone, and then you find your dog, or your cat, horse or your cow, it's huge. Even if the cow is not a pet, it's an economic thing for you. So it's big to get animals back to owners (Skaer, 2011).

Communicating to owners during a crisis about what animals are in the shelter, and how to get them back becomes a big job, but an important one according to Skaer (2011).

Skaer (2011) told the audience that the veterinarians experienced mental issues after the recovery efforts.

This was really hard work. It was sad to have to euthanize so many animals. Responders want to work twenty-four hours a day, but you have to take a break and you have to watch out for your team members. Our volunteers now are getting

psychological first aid so they know how to identify signs of stress in their teammates. They tell each other to take breaks so they don't do something detrimental like go take a drink. You don't want to come to a disaster area if you're addicted to something. You can't have cigarettes in this environment. Sleeping arrangements and food are other areas that were problematic. We brought some things, but we weren't prepared for what we need to bring. We needed to have seventy-two hours of supplies for ourselves so we didn't become part of the problem. (Skaer, 2011)

Red Cross is joining forces with animal response teams, and this is a step in the right direction if by helping animals you help humans. This will allow people to know that their pets are safe and well cared for during the aftermath of a crisis.

Nationally, the Red Cross has a policy that you can't house animals with humans. I understand that because you might have folks that are afraid of animals or are allergic to animals, but the Red Cross is beginning to understand to help the human you have to help the animals. So they are starting to help us create policies to colocate shelters. Now, the Sedgwick County Red Cross calls us in emergencies, and they say we're going to set up a shelter in the church and they have agreed to allow animals. Can you come? So we can set up in a different room from the humans, but the humans can come over to the room with the animals and see their animals and take care of their animals. It's a big deal. If you're in a shelter, and you don't know where your dog or cat is or you can't see your dog or cat, it's really, really stressful, but if you can go in the next room and see your dog or cat, feed them and take them out, it's a lot less stressful on the humans. It's also a lot less stressful on

the dogs and cats. There's a big difference in the mental health status of the animals where their owners can come and interact with them as opposed to a shelter where only strangers care for the animals. (Skaer, 2011)

In the response for the tornado in Reading, Kansas, people came from all over the state that had been trained. Initially, the Lyon County Extension office helped locate animals to the Lyon County Fair Grounds before the trailer arrived. The equipment that was available was much better. There are now four Animal Response Disaster Trailers that are spread throughout the state. The trailers house about 50 animals. There are also veterinary Go Packs for animal needs and personal Go Packs for veterinary responder needs. There is also tracking equipment that allows for bar coding information about a pet and attaching it around the neck. It is very similar to the bracelets used on human hospital patients (Skaer, 2011).

The key to informing the public about animal recovery efforts is to inform prior to the tornado season, get the word out immediately following the crisis, and continue communicating with those in the disaster area following the crisis according to Skaer (2011).

Another way to inform the public about the need for animal evacuation is what Agent B is doing as she attends conferences to present Sarah's Story. She details the tornado event as to what happened to their family dog, Sarah, during the tornado, much as she did earlier in the report, and she shares the decisions they made prior to the tornado regarding the dog and the outcomes of those decisions. She also shares what they would do differently if another tornado occurs.

**Chronic Crisis**

**Personal.** The Comanche Co. Extension agent found my daughter's phone number and called Saturday morning immediately following the tornado. She said that she was going to Dodge City, and asked what I needed. I told her, 'I don't have anything. I don't have underwear. I don't have a toothbrush. I don't have clothes. I don't have anything.' She asked for sizes, and came back with shoes, underwear, an outfit and a toothbrush. That was helpful.

What I didn't need to hear is about leadership development. I didn't need to hear about we have a program to help with that. I needed to know where a pair of shoes was, and I needed to know where some socks are. I needed to know where I was going to get my next meal. I needed to know where I was going to sleep that night. It's the very basic necessities that people are concerned about at that moment. You have to remember everything in town where we would get those things was gone, and we didn't have vehicles where we could get out."

**Family.** My daughter asked me what we were going to do when we were first looking at all the damage. I told her we were going to rebuild. She said okay, and that was it. We knew that was what we were going to do. But how to go about doing it, and where you're going to get the means to do it, and how you're going to get it all done is a very different thing."

**Employee.** My coworker lost both vehicles, but she didn't lose her home so she could step in and cover the work front because she didn't have to worry about her house and her family. She was not in that crisis mode where the rest of us were trying to dig out. We had to move our office right after the tornado and (Agent A) took care of that with the



help of other Extension agents from the area. We had very little, and most of the stuff that was left wasn't much use to us during that time. In those first days, we had to know the answer to their questions off the top of our heads. For example, they would say they found canned goods that looked all right and would ask if they were safe to use. We said no, they aren't safe because the pressure could have caused tiny holes that glass could get into the cans. They would ask, "Are you sure?" And we would say, 'yes.' You must throw away everything. "Then they would ask if they could drink the water. And we would say, 'no' you have to drink bottled water. Those are the kinds of questions that we just had to know the answers to because there really was no place to go for the answer at that point. We had no Internet. We had no phone. We had no place to buy any necessities. So, it was really hard to tell someone that they had to throw all that away, but that's what we had to do for their safety."

Agent B said Extension administration was helpful and tried to reduce her stress. "They said your job is secured. Don't worry about your job. What can we do to help you out?" This was also a new situation to administrators. Interview participant (P5) said, "We wanted to make sure our colleagues were safe and secure first. We needed to know how to help them personally, and then we looked at how Extension could help the community."

"Until I could replace my vehicle, K-state sent a mini-van out for us to use. They kept asking what resources do you need. At that time, you don't know what you need. What we really needed was a good phone line and the Internet. Once we did get the Internet back, it became our source of communication and information from K-State. That became so important to us, and it was a service that was hard to get back into the community for everyone. We didn't know where people were. We didn't know where

people were living. We didn't have an address. We didn't know how to contact a lot of them. Some of them would contact us, but would forget to tell us how to get back in touch with them. Most people dealt with their cell phone those first few years. We put a cell phone directory together because the telephone directory was no good at all, and it was printed at the K-State Extension press." Often times the help from Extension was behind the scenes, and the public may not have recognized Extension was helping in so many ways. "When there was a need, if (Agent A or Agent B) could find a way to get help from Extension, they would. The help just came from many directions. Even small things at a time like this are huge" (P7).

**Community.** "AT&T worked well with us because they worked out a system where our land lines rang even with a different phone company. By the week after the tornado, they had set up temporary offices in Mullenville. All the County offices were back up and running. For the first week, there was no way to communicate. Most people were displaced. They were in Haviland or Mullenville. They were in Coldwater. They were with their family. They were just trying to get to Greensburg to talk to FEMA to find out what they needed to do, and to get help in deciding where to go next. Remember some people lost both their home and their business. We lost our school. I lost my house. I lost my church. (Agent B starts crying here.) I lost my office. I lost the places where I shopped. I lost my doctors office. We lost the hospital. Everything is gone. It's overwhelming. So the first few days, you're just in a fog. You don't know how you're going to get started. Some people looked at it and just got overwhelmed. They just left. You can't fault them for that. The people that stayed made that conscious decision that night or the next day, and then they went to work."

Agent B went on to say “The people who stayed realized that you pick up one broken board at a time and you carry it to the curb and you go back and get another one. You just start with that in an orderly fashion. That’s how you’re going to clean it up and that’s what you’re going to do. There were a lot of hoops that had to be jumped through. There were a lot of people that didn’t know where to go. I really didn’t either, but once I got there I started figuring it out for people and started directing them to where they needed to go and whom they needed to talk with. Such as you need to go see FEMA. These are the things that you need to do. I remember getting a phone call from a young girl. She and her mother had moved to Dodge, and she said ‘you’ve got to help; you’ve got to help me. My mother is in a state of shock. She’s mentally distraught, and I don’t know what to do.’ I told her that you must find a doctor. I can’t help you over the phone. You’ve got to find some help for your mother in Dodge City. Those were the kind of calls that we got. It was difficult. I need to take care of my family, but I also need to take care of all these other people.”

While Agent B was stressed in her job, many others involved in helping the people of Greensburg were also. “All of us that were in the service to the community type jobs were overwhelmed with the responsibility” (P8).

Agent B said that they were not only dealing with people, but they were also dealing with animals as was outlined earlier. Most people didn’t have a plan for dealing with their pets during a tornado so many pets were running loose and were injured. KSRE and the Kansas State University College of Veterinary Medicine worked with the animals in Greensburg following the tornado at a makeshift shelter. Statewide County Animal Response Teams are forming so they can be called out just as the Red Cross and FEMA

are called in the event of another tornado. These teams are receiving training and have specialized equipment such as a shelter trailer with kennels for animals.

Agent B said a great deal was learned about dealing with animals during a crisis from the Greensburg tornado. There was an instance at a Red Cross Shelter where a Vietnam veteran lost his home and came to the shelter only to be turned away because he had a dog with him. The man, with nowhere to go, left because he wouldn't leave his dog. A concerned citizen intervened and told shelter officials that this man had very little and his dog was his lifeline. The rules were bent, and the man and his dog were allowed in the shelter. "We've learned in disaster relief efforts that you can't help the people unless you also help the animals. The human animal bond is very strong, and people consider their animals family" (P8).

### **Agent B Crisis Resolution**

**Personal.** "It is still painful to talk about and to think about. It just doesn't get any easier," Agent B said. "We are not in full recovery yet. We've worked to put our lives back together. We've rebuilt our homes. We've rebuilt our churches. We've rebuilt our businesses, but we haven't healed." She said those who haven't experienced the total devastation of a tornado would never completely understand. "For those outsiders, who say that they don't understand why we cry after all the years, they're right—they don't understand. And, I can't explain it. But I can tell you that there will be times when I talk about this tornado when I'm 80 years old, and I'm still going to cry because there are memories. There are sounds, and there are smells that are triggers, and immediately I am right there again. It was emotional and will be a part of my life until the day that I die."

She said, “We can tell people. I had a group that I talked with from Oklahoma, and they put a grant together last December. And I had another Extension educator group from the University of Wisconsin come in June, and I told them I can explain to you and I can tell you what it was like, but there is no way for you to fully understand unless you were there, and I don’t wish that on anyone. All of us in Greensburg that went through that tornado have been bound together by a force from God and we will be bound like that until the day we die. It’s similar to the Vietnam veterans. I grew up during the Vietnam War, and soldiers would come back, and we would say ‘boy those guys are crazy in the way they act.’ I understand now that they were bound by a situation that was greater than they were. That’s what happened to all of us that night that we lived through the tornado. We became bound together by that storm. We will have the bond until the day we die.”

**Family.** “We didn’t take vacations. We didn’t have weekends with down time. We were with family, but we worked with family, and that’s different than playing with family. I bought a pool and put it in our back yard. Some might say that was extravagant and money that I didn’t need to spend, but that pool has been our family time. Not just for my daughter and grandchildren that live with me, but for all my children and grandkids, and that pool has been our release time. We take a break. We have a meal. We watch the kids play. It was an investment that I couldn’t afford not to make. Others have found similar things, and perhaps an outsider would come in and say, they lost everything and just look at that swimming pool. I would say walk in my shoes. At the moment, there is no rec center. We do have some playgrounds. We also put in a swing set and a trampoline because there was nowhere else for those kids to go. They needed to play.

The reaction you got from just little things, we moved in, and we had no yard obviously. And, every wind would blow there would be more glass and debris. So we thought we've got to get grass. We moved in two days before Christmas, and our goal for the next summer was to get grass. We didn't get it put in until the end of September. The day they put in the sod my grandkids got out and literally rolled in it. They were so excited to have grass. The dirt would blow in their eyes before so outdoors wasn't fun. Interviewee (P8) said, "The people are generally thrifty, and so small luxuries, particularly when neighbors and friends were struggling, made people feel somewhat guilty. But it was important for all of us to find a way to relax."

Five of us lived in a three-bedroom FEMA trailer. It was cramped, and it was little. The littlest one was two at the time we moved in cried that he wanted to go back to the FEMA trailer when we moved to the new house. Because that was security, and that was his home. He didn't know any place else. I cried myself the last time I cleaned it. And I wondered why I was crying because I have a nice house to move into, but when we had nothing, and they brought us that FEMA trailer I was so excited to move in. I talked to our state representative, and said would you have ever thought we'd be so excited to be moving into a FEMA trailer. He said, "No!" Interviewee (P9) said, "We were thrilled to have those trailers and once again moving was another change. "The rapid pace of change that we were experiencing was hard for all of us to adjust to, and some of us in the community did it better than others. Some people just seemed more resilient."

Agent B said that in the FEMA trailer, you could see where everyone was all the time. "When we moved into the new house, the kids always wanted to know where the others were. They didn't want people to be out of their sight. They wanted everyone in the

same room. They wouldn't go down in the basement. They wanted all of us to be together. The boys wanted to sleep together, and my granddaughter slept with my daughter for a long time because they needed that security.

We've been in our new house for two years now, and in the last six months I've noticed them more comfortable with not having everyone in the same room. They will also go downstairs to play. They feel comfortable being outside and not knowing where everyone is. We still get really anxious when the wind blows, and I never did before. When a storm comes up, they want to know where their mom is and where everyone is, but needing to have everyone within their sight has finally gone away.

**Employee.** “The Kansas Optimizing Health (or Help) program was something that I thought was very needed in Kiowa county because we have been really affected by this storm so that's an Extension program that is fitting right in with what we need in Kiowa county. It wasn't designed specifically for Kiowa County, but it works very well with what we need,” Agent B said. Kansas Optimizing Health is an Extension program for people with different chronic health problems. They attend the program together and are involved in a variety of exercises and activities. Two trained leaders facilitate workshops from a highly detailed manual. Participants learn how to deal with frustration, pain and fatigue. The benefits of exercise and how to make a plan really work is also discussed. Managing medications, and learning how to communicate with family and health care providers regarding their illness are also covered. The participants discover the importance of nutrition while learning how to make informed treatment decisions.

Interviewee (P13) said, “One of the things that helped me get through the tornado and the rebuilding time was just telling my story. For some reason, it released tension.”

On the youth development side, Agent B said it was difficult to focus on the kids during the crisis. “People said our 4-H program was dying. Well let’s see, we took a direct hit. We lost kids. We lost facilities. We lost everything. Those 4-H families know how important 4-H is, but the main goal is to put their lives back together. Asking them to do one more meeting or one more thing, when some of those families didn’t even live in the county anymore, and we’re going to ask them to drive 60 miles round trip? No, they can’t do that. They can’t. They won’t. And, I’m not going to ask them to. That’s too much. Now we’re beginning to see interest three years out. We got our buildings back. This year we’ve had people say they want to be in 4-H. They are new people to the program. This is because we can start thinking of things besides just the basic necessities and getting our lives back,” she said.

Interviewee (P14) said, “Some kids in the community were involved in the building green project and seemed to thrive on that. I’ve wondered if we couldn’t have done a better job of getting more young people involved in community type projects so they felt more a part of a solution. You know, more a part of putting Greensburg back together with a look to the future.”

**Community.** When asked if there were mental health professionals available to help, Agent B said, “We didn’t have the time, and at that time, you didn’t even realize that maybe you needed that help. Now, one thing that the health nurse and I talked about was that we were amazed that we didn’t have any suicides over this. We didn’t have any major mental health issues over this. Now, we’ve seen some older people with depression, and three years later we’re seeing some problems in marriages. Those marriages that weren’t strong to begin with probably caused a lot of those to dissolve. My son’s was one of those.



He and his wife ended up divorcing a year ago. If the marriages weren't strong, then this really hurt.

If some people had a tendency toward depression, it probably made it worse. We've seen alcohol abuse. We've seen the emotional problems, and now we're seeing the physical toll it's taking. People will come in and say I'm just so tired. I don't understand it. I have no energy. I don't know what is the matter with me. I've had blood tests run, and there's nothing wrong. And, there isn't. We have been driven with adrenalin for this many years, and we're tired. Our bodies are tired. Our souls are tired. My daughter is only 30 years old, but she will tell you that she feels like she has aged ten years. I used to say age was a state of mind until the tornado, and now there are days that I feel really old. It's taken its toll on us, and now we're beginning to see physical ailments manifest from mental things, and they don't understand why they are so tired. It's nothing more than the three-year marathon of trying to put your lives back together. There are people who say they want their life back the way it was before, but it will never be that way. If you cannot adapt to a new normal, then you're never going to be happy about it."

When asked how people would have responded to a mental health person coming in and saying you need to stop, take a break, and talk about this, Agent B said that people would have said, "we don't have the time." She added, "People have run on adrenalin for years, and now they don't understand why they aren't feeling well."

Another thing Agent B said was important to the well being of the community was that community members needed to be able to tell their story of the tornado in their own way. This story telling is one issue that fueled the creation of the Kiowa County Media Center in the \$6.1 million Kiowa County Commons building. The building was built to

Leadership in Energy and Environmental Design, LEED standards. The building features many sustainable design features, including the use of photovoltaics that is using solar radiation to create electrical power, light monitors in the roof, a green roof complete with walking path, rain water retention, water conservation fixtures and the use of insulated concrete form construction techniques. The building houses the Kiowa County Extension Office, the Kiowa County Public Library, The Kiowa County Historical Museum, and the Kiowa County Media Center. The Media Center's high definition video production facilities include a 22-foot HDTV production trailer for remote broadcasts and HDTV production. It provides live, global Internet video programming, Internet radio studio, an interview studio, a small conference room, and 16 video, audio, and graphics editing workstations to support production in all digital media. All of this is so that citizens can tell their story. "Everyone's tornado story is different, and it's important to record them. It's important for the people to tell the stories in their own words and in their own way" (P16).

The Media Center supports regional, community-based journalism. As journalism moves into the 21st Century, it must change. With the disappearance of paid advertising revenue, newspapers are closing and other media is retrenching. The one area of growth is in community-based journalism. The Media Center plans to directly involve the citizens and students of Kiowa County in creating an Internet-based, community model that will inform and entertain its viewers and readers. Just as small towns and rural areas have long relied upon volunteers to staff its firefighting and emergency response units, the Media Center will train and involve residents in informing their fellow citizens about the important local issues of the day (West, 2011).

There is some question if the community will embrace and produce news for the long term. However, in a 2010 study, it was noted that:

The Greensburg community's response to the May 2007 tornado has forever altered the attitudes of both young and old toward advanced electronic communication technologies, and the construction of the visionary media center offers unlimited quantitative and qualitative research opportunities in terms of future audience acceptance of the Web portal, its content and, if the center is successful, how such a project might provide a blueprint for other small towns across America. (Smethers, Freeland & Rake, 2011, p. 7).

Interviewee (P17) said, "We are a different community now in terms of how we look for our community news. I think we've learned that we all have different perspectives of things, but that is something to be embraced not feared, and this new technology allows us to share those perspectives." Interviewee added, "I might be called more of a lurker on this stuff. I'm so interested in reading and hearing news created by others like me, but I doubt if I would actually create anything on my own to share. I'm happy to be the audience." Interviewee (P19) said, "I don't want to lose our local paper as we work on the community news thing. The Kiowa County Signal has been an important part of my life for years, and I want that to remain. I want both to survive."

Community members also told their story was by taking part in a two-season series for Planet Green titled *Greensburg: A Story of Community Rebuilding*. The series was co-produced by Leonardo DiCaprio and Craig Piligian. Agent B and her daughter were featured as a family struggling to rebuild their lives. Her work as an Extension agent was not highlighted. The series produced important gifts for the town of Greensburg in support

of its Green decision. One such gift was from DiCaprio who donated \$400,000 toward the business incubator.

Agent B said the promo for the series sums up the Greensburg efforts as, “Greensburg is committed to building smarter and better, and they are determined to make their town a model for the future. Struggles abound as the city government strives to build the greenest buildings in the country and citizens try to stay patient living in temporary FEMA trailers. It is the spirit of the Greensburg citizens that makes the journey most inspirational, as people of great character choose to create a better life for themselves and their children.”

## CHAPTER FIVE

## SUMMARY AND ANALYSIS

The overarching research question of this study follows: What is an effective information transfer role KSRE agents and administrators can perform in the aftermath of a crisis? This study indicated that the information transfer role is essentially the same in a crisis as it is for normal business days. The Extension mission—to provide research-based, relevant information to improve lives—works well in times of tranquility and disaster. In a disaster, the reaction and implementation time is much faster and agents must make decisions often without assurances that normally exist. After the tornado, personnel made sure their families were secure and safe and then went about the business of bringing clear, concise, and rich information to the Kiowa County cleanup and rebuilding efforts. Information flowed from the field agents in Greensburg to the top administrators in Extension. Extension administration empowered agents by assisting with family needs and providing information and resources that enabled them to quickly re-establish their offices.

The answers to the six sub-questions that provided guidance for this study began to surface as each agent and research participant shared their story. In many ways, the shared accounts of those interviewed followed the patterns described in Weick's sensemaking (2001) work and in sequence compatible with Fink's crisis cycle (1986).

*What information did the KSRE agents require and how did they acquire it?*

Prior to the tornado the agents received training that would later prove to be critical to their ability to provide information to the residents of Greensburg. In addition, both agents had the personal experience of being in and near tornados in their pasts. They

were both weather savvy and were personally prepared when the tornado struck Greensburg. As Siebert (2007) suggested, the way an individual reacts to everyday challenges influences the chances of being a survivor in a crisis, and in the case of the Extension agents, both exhibited the core elements Siebert outlined for survival. The Extension agents quickly absorbed information that a tornado was imminent, and they felt confident they had the necessary training to do their jobs. They were willing to do whatever it takes to do so.

The emergency preparedness work the agents did in the community as well as the information they received before the tornado on topics such as how to remove mold, food safety, working with commercial and companion animals, financial planning and record keeping allowed them to operate with confidence and authority during the crisis. As indicated in reports following crisis situations, many think it will never happen in their hometown. The agents experienced this type of thinking during the emergency management planning. They joked that nothing would ever happen in Greensburg, and they didn't think they would ever be called out, but they continued the planning and training regardless.

Even with all the planning, Agent A was amazed at how many things their plan didn't cover, and one of the most critical was the fact that there would be no way to communicate with one another because of a total loss of communication tools. Prior information and training was critical to their ability to function efficiently during and after the immediate tornado crisis.

In Weick's terms (2001), both agents were complicated people with complex repertoires of skills. They were able to knowledge from training and apply it to this

unanticipated event. This demonstrates the Extension agents' ability to use prior information to improvise. As Wieck's (1989) work with improvisation indicates the Extension agents first had to know "the melody." In this case, the Extension agents understood their mission was to bring science-based information to their public constituencies. Through prior experience and training, they had developed a specific skill set that allowed them to operate effectively in this crisis. The Extension Service provided information and training prior to the tornado that allowed the Greensburg agents to build tacit knowledge about such issues as food safety, retrieving important documentation, and cleaning and restoring damaged items, that they used to serve their constituency during this high-stress event.

Agent A said, "I knew that to be able to help people in the coming days I would have to rely on my training and what I knew off the top of my head. I was confident that I could do that because of my prior Extension training." Given the agents' adaptability during this crisis, Extension exhibited characteristics of a highly reliable organization. Weick and Sutcliffe (2001) described a highly reliable organization as one that positions well-trained employees in the field with the freedom to adapt to the situation and one that listens to those positioned on the frontlines because they know the organization's strengths.

Another aspect of the agents' work preceding the tornado was the relationships they established with members of the Kiowa County community. As Williamson's (1998) work suggests, people who need information, especially under stressful conditions, turn to those they trust most. In the immediate aftermath of the storm, residents of Greensburg looked to the Kiowa County agents for information. While Extension provided booths

staffed by agents from neighboring counties at the designated shelter sites, and residents visited with those agents, they sought out the Kiowa County Extension agents for confirmation of the facts and reassurance of what they should do next.

Those seeking information from the storm followed Chatman's (1987) and Savolainen's (1999) description looking for information in two categories, job-related and non-work related. Many individuals in Greensburg lost both their home and their workplace, and the Extension agents provided information in about both to their clients. In the early days of the crisis, that information was to how to find a place to live; where to get supplies, food and health care; and how to apply for disaster relief benefits and unemployment. Agent A spent hours responding to community needs for information and disseminating information directly to those who needed it via the *Yellow Sheet*.

One particularly effective information dissemination method immediately following the tornado was hand delivery of the *Yellow Sheet* to those cleaning up after the storm. Agent A referred to this as "walk-and-talk" time where she could deliver the *Yellow Sheet* and then verbally answer questions those cleaning up had on a variety of topics. This was excellent service to her clientele as well as excellent public relations work for Extension as a whole. As time progressed in the recovery efforts, the information needs focused on rebuilding Greensburg. Agents then supplied research-based solutions through their work with the Public Square and Recovery Plan projects.

As stated earlier in this document, this study's orientation regarding the flow of information within a CRES program is not typical of most "top-down" approaches to crisis communication, which occurs from top administrators to field agents. Rather, information first flowed from the field agents who were engaged in the crisis to top



administrators. The weekly conference calls with the KSRE Manhattan administrative team gathered informational needs from Agents A and B, and then secured the efforts of the appropriate Extension specialists to provide the needed information meet needs. The areas of informational resources were many and included, but were not limited to, animal sciences and veterinary medicine, architecture, business, communication, counseling, economics, engineering, environmental studies, forestry, human ecology, and marketing. As Agent A said, “This is where Extension excelled and truly followed its mission. This brought the full resources of the Kansas State University Research and Extension to Greensburg. It is the mission of Extension, and during the recovery period, many facets of the University joined forces with Greensburg residents as we rebuilt. This was good for Extension and good for Greensburg.”

*What was the quality or richness of the information acquired, and was any of the required information made available to the KSRE agents prior to the Greensburg tornado?*

Immediately following the tornado the agents needed to provide simple, clear and “rich” information to the residents of Greensburg. When people are under the stress of losing their home, community, and sense of security, they need large quantities of rich information required to regain their life balance. “Information richness is defined as the ability of information to change understanding within a time interval” (Weick, 2001, p. 10). Greensburg residents needed rich information that they could quickly interpret, and it had to be presented in a simple format that was clear and concise. In the presence of a crisis, individuals will revert to their prior experiences and existing knowledge. That is exactly what the agents did.

Agent A said, “This was a time of great need for information, and we couldn’t call 911 for help. We had to solve our problems together.” The agents reverted to prior training and existing knowledge to help their clients through the immediate aftermath of the tornado. With the passing of time, the information needs became more specialized and more detailed. The agents had more time to respond so they could search out the right Extension specialist to fill the information need.

In the early stages of this research project, the researcher thought there was a need for a handbook or guide for agents to use during a crisis; however, it is now clear that the agents didn’t have time to consult a handbook for procedure. They had to know what they needed to know when the tornado struck.

Fink (1986) indicated that in the case of land grant universities or any organization with staff in the field, it is critical that the information is disseminated to the field staff before, not after, a crisis occurs, and this was particularly true for the agents involved in the Greensburg tornado.

The Extension method of training and close association with those who work in emergency preparedness in the counties prior to a crisis is a more viable method of preparing agents for a disaster than creating a handbook. Schouten (2004) recommended that organizations have their own plan to handle a crisis and not to rely solely on the community crisis plan because that organization’s plan may compensate for any weak spots in the community crisis plan. Extension was able to provide expert information and human capital to strengthen the recovery and rebuilding efforts. Examples of this include the production of the daily *Yellow Sheet*, the radio broadcasts, matching Extension

specialists from across the state and nation with specific project needs, and simply being available and willing to serve when called upon even four years after the tornado.

*At what time during or after the disaster did the agents experience moments of cognitive dissonance, and how did the agents regain balance between thought and action during the times of cognitive dissonance?*

Prior to the tornado, Agent A experienced cognitive dissonance regarding her role as a county emergency management member. She thought the training would never be needed especially in the context of a terrorist attack, but when she was told that she had to come immediately to do her job so others could do theirs, she realized for the first time that she would be required to leave her family and go to work for the good of the community during a crisis. She regained her perspective when she thought of the emergency management work in terms of storms, not terrorist attacks, because she was familiar with and understood storms. Tornadoes were much more a reality in her life than being attacked by terrorists. Immediately prior to the tornado, Agent A prepared, but thought that this would be like so many times before. A warning would be issued and nothing would happen. When the tornado struck, she told her husband that she had to go to work, but her husband wouldn't let her leave until he found the rest of his family living in Greensburg and got them to safety.

Agents A and B both experienced cognitive dissonance regarding caring for family and the need to help with the immediate aftermath of the tornado. In fact, the major episodes of cognitive dissonance for both agents involved decisions of caring for family or working for the community.

*What part did KSRE coworkers and administrators play in assisting agents with their needs?*

Extension coworkers and administrators assisted agents in varying ways at various stages of the crisis. Agent A and B relied on their tacit knowledge just prior to and immediately following the tornado. This is congruent with Weick's (2001) observation that as an individual is more stressed he or she reverts to what they know best as they try to make sense of a crisis situation. He points to jazz musicians in his example, and notes that as the tempo increases, the musicians play what they know best. This is what Agent A and B did following the storm. As they moved from using their tacit knowledge, they leaned on the tacit knowledge of others who were involved in the storm. These were the first responders and the volunteers who they joined forces with to make sense of the whole situation and began to assemble some order to the chaos.

The first assistance provided by Extension coworkers and administrators was comfort care. Calls were made to check on the agents and their families welfare and to offer assistance. The assistance came in the form of clothes and personal care items as well as a vehicle to drive.

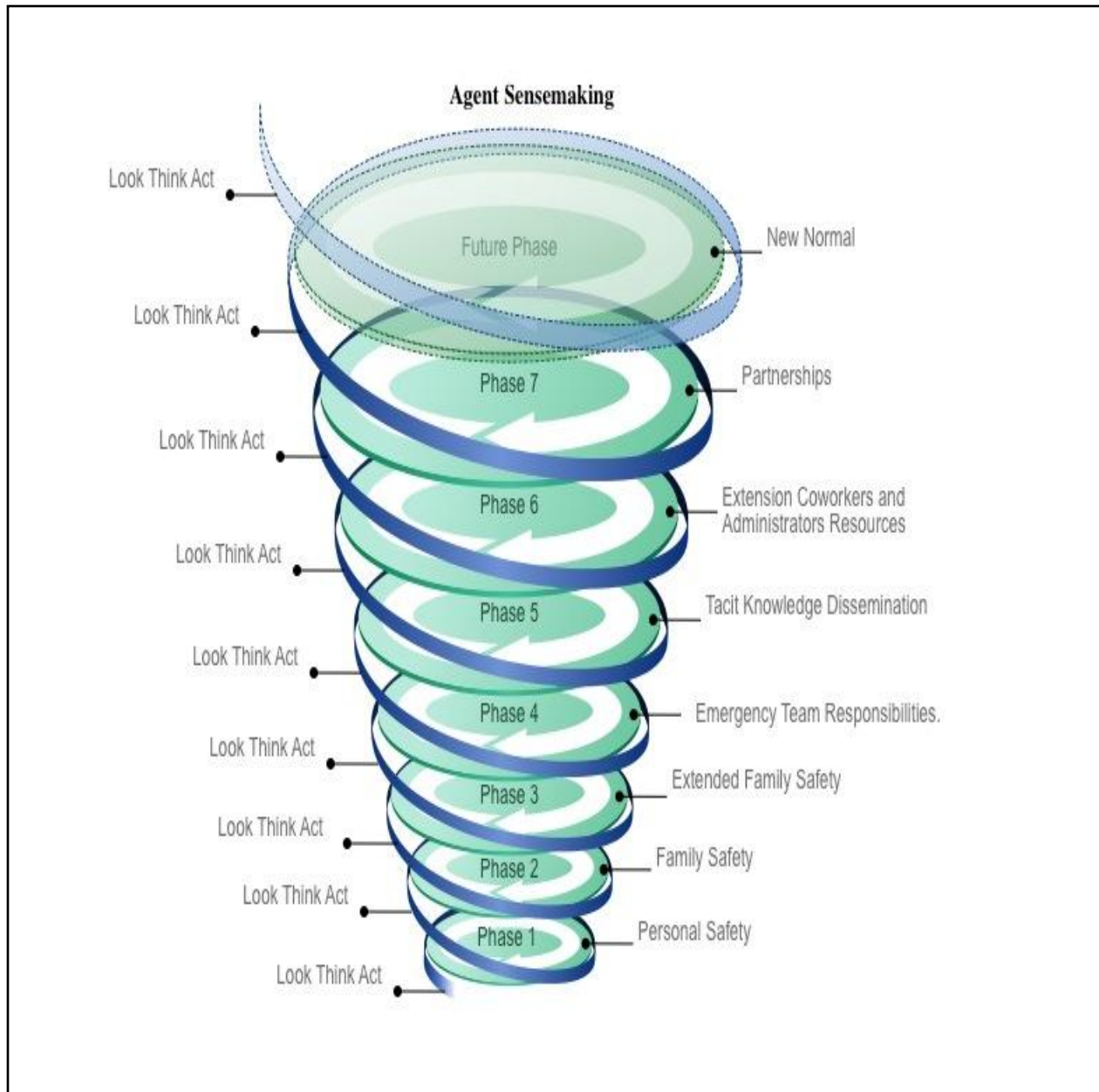
It was only after those needs were taken care of that the agents were able to draw on the vast wealth of assistance KSRE could provide them. The agents reached out to Extension agents in the surrounding counties to ask for assistance in clearing the debris from their offices, and to staff Extension help booths at the tornado shelter sites. It is at this point that the Extension mission—to provide research-based, relevant information to improve lives—proved that it works as well in disaster as it does in times of tranquility. In

some ways, Extension works even better when the community need is greater and the response is larger and more visible to the public than in quieter times.

Another way to examine how Extension coworkers and administrators assisted the Kiowa County Extension agents is Weick's (2001) and Fink's (1986) models of sense making where individuals who experience cognitive dissonance examine and respond to a situation in a spiral of "look, think and act." The spirals can further be examined by how decisions are made on a personal level, for the family, as an employee, and as a community member.

Ironically, in an extreme crisis like the Greensburg tornado, the spiral becomes more of a funnel shape (Figure 8). The bottom of the funnel represents the moment the tornado hit. First, the agents determined their personal situation by assessing their injury and safety status. Then, the spiral expands to determine if family members are injured and what steps need to be taken to find safer shelter for the immediate family. After the immediate family is taken care of, the next concern becomes extended family members. Efforts are made to find information about them, and then steps are taken to provide safe shelter for them. The spiral then expands to include the emergence response portion of the agents' job. Here each member of the community relies on the tacit knowledge of those involved in the crisis to begin stabilizing the situation, providing information, and finding help for those in need. The agents moved through these spirals of the funnel in a matter of a few hours.

The agents then moved to the spiral representing the day following the tornado by assisting community members in deciding how to pick up the pieces and move forward



*Figure 8: Agent sensmaking after the tornado.*

with their lives. Agents determined information needs from community members and disseminated information in response to needs relying on tacit knowledge developed by prior Extension training and life experience. As the situation stabilized, the agents started reaching out to additional information sources, including coworkers and Extensions administration.

Information was created specifically to respond to the needs of community members in formats conducive to dissemination in a community without many viable options for mass communication. This community care is part of the Extension agents' job, and it is accomplished while caring for personal and family needs simultaneously. After the family situations start to stabilize, the spiral is expanded to include working to rebuild the town of Greensburg. The value of partnerships, such as with Public Square, that Extension established prior to the tornado become an important part of assisting the agents to be recognized as reliable and sought after resources of information in this phase.

With the vast array of Extension specialists in the state and nation, questions were answered with unbiased research-based information. This allowed the Kiowa County agents to participate in a neutral and nonpolitical way as the community was rebuilding. The rebuilding of a city after a disaster is fraught with heated debates, personal agendas, frustration and fatigue, and it was essential that the agents operate by providing neutral information and allowing the members of community to make decisions on the information provided.

After the rebuilding was in progress, the spiral expanded to what the residents of Greensburg refer to as "the new normal." This is back to business and back to living life without every decision being how to recover from the tornado.

*What is an effective information transfer role for KSRE agents and administrators to perform in the aftermath of a crisis?*

KSRE demonstrated its ability to help constituents learn and move forward as they sorted through the options of how to rebuild their lives by providing free and unbiased information to people during the tornado crisis and recovery. Extension's mission—to provide research-based, relevant information to improve lives—works well in times of tranquility and disaster. In the tornado disaster, the reaction and implementation time was much faster, and agents made sense of the situation and made decisions without resources that normally exist. After KSRE personnel made sure their families were secure and safe, they began implementing response and recovery efforts.

Much as in the Katrina hurricane crisis (Cathey, Coreil, Schexnayder, & White, 2011), the Extension model that contributed to the effectiveness of KSRE's tornado response was the Extension structure of working from the field to the state level and by working in collaboration with many local and state agencies, organizations, and entities. Past relationships with groups allowed Extension to provide a multi-layered, multi-faceted response addressing critical human, animal and community needs during difficult times. For example, FEMA relied on the collaborative work with Extension and Public Square and has now permanently changed some of its protocols in working with communities immediately following a disaster to include items from the Public Square process.

Demand for Agent A to do public presentations about her experiences in Greensburg before Public Square community participants remains high. Her presentations describe how the community made sense of what had happened and what actions they took to get them to the “new normal” section of the sensemaking spiral.



Extension can provide outlets for people to tell their story. Those in a disaster like the Greensburg tornado need to have an outlet to talk about their experience and find support. This psychological first aid is a service Extension can provide because it is providing immediate support, not necessarily immediate counseling. The key issue is really how the individual will choose to deal with the trauma. If they get back into a stable routine and are able to move forward with local emotional support, they most likely will be fine (Gibbons, 2011).

Providing information to help people get back to that stable routine is exactly what Extension is all about. Extension can help people look back and remember while at the same time highlighting the resiliency of humans. Comments from interviewees indicate that Extension did a good job of conveying that we know you're resilient, but how can we best get your feet back under you?

Disseminating information about the dangers of and how to stay safe in storms is an ongoing issue Extension, weather agencies and emergency organizations can address. As the agents noted, one of the more challenging parts of the immediate aftermath of a tornado is that information transfer is challenged because communication technology is lost. Just as the KSRE agents did, those involved in a tornado will need to have confidence in their own training and life experiences to provide information until communication channels are restored. Once restored in Greensburg, Agent A in the role of public information officer was a vital link in finding information needs, creating or locating appropriate information to fill the needs, and disseminating that information to the public.

The walk-and-talk sessions were invaluable in determining early needs and establishing Extension as a trusted source of information at the beginning of the recovery efforts. This trust and reliance on Extension continued throughout the recovery efforts. As interviewee (P12) said, “We came to rely heavily on (Agent A) and her contacts through Extension. At first we would be discussing a topic, and she would say that she could contact a specialist in that area to help. After awhile, we’d just turn to her and say what specialist do you know and can you contact them. The beauty of the help she brought to us was that it was based on the latest research, and it was unbiased. Because Extension is nationwide, the Kansas specialists often brought in specialists from other states to provide expertise. No one was trying to sell us anything. They were trying to educate us and help us find the right questions to ask as we started looking for ways to solve problems. On top of all of that, their services were free, and that was a huge benefit to us at that point.”

There are several areas that warrant future study including how new Extension agents would handle a crisis, allocation of time of all workers, children and family issues, dealing with those who do not take the risk seriously, and the treatment of pets. The first area of future study to be identified is how new Extension agents would handle a crisis. Experienced Extension agents handled the information needs during and after the tornado in Greensburg, and how new Extension employees with limited training would handle a crisis is an important area to explore.

The second area to examine is the allocation of time and the perception that others have more time to give in a crisis. While Agent A did not lose her home, she did experience the storm in much the same way as those who did because she helped rebuild the lives of the three couples living with her. In addition, her own home was damaged and

she lost her childcare. Others in the community, including her coworker, assumed and often indicated that she should carry more of the workload simply because her home wasn't totally destroyed. In the end, Agent A actually lost more than others because she worked to live up to those expectations that she should work longer and harder. When asked what gave so she could do this, she responded simply, "my kids." She also lost her marriage in the aftermath of the storm.

A third area for study is how children and the family structure are affected during a tornado crisis. Emergency workers had high levels of anxiety when making the choice of leaving family and serving the community during the crisis. It will be important to look for ways this stress can be reduced. Furthermore, as both agents said in their interviews, the children were often the ones that were left on their own in learning how to cope with the storm as the adults were so busy trying to rebuild their homes and community. Perhaps, one model to explore is to look at how Public Square officials used teens in helping to describe what Greensburg should be in the future and how important "going green" would be to the next generation.

A fourth critical area for future examination in a tornado crisis is some people don't prepare for a disaster. It is important to annually remind residents of the dangers of storms. Ripley (2011) noted that humans get serious about avoiding disasters only after a disaster. People know bad things can happen, and people make disasters much worse by their own lack of initiative and willingness to ignore risk. Some people avoid protecting themselves from guaranteed threats. People know the dangers of Kansas' storms, but many don't have a plan.

The final area to explore is that people have a difficult time making sense of how to handle pets during a storm. Future study and commitment could be made in the areas of animal rescue and identification for companion animals and livestock. It is critical that emergency responders understand that by helping animals they are also helping humans as Taboda (2011) and Skaer (2011) stressed when they described their work in animal rescue during Katrina and the Greensburg tornado. The human animal bond is a strong one that crosses all ethnic and financial lines. KSRE agents can be a vital link in informing people that they should and can take their animals with them during a crisis and evacuation, and they will receive the help they need.

Many emergency volunteers are still operating under older rules that indicate aid is just for people, and the media is distributing old information. This is an emerging part of crisis communication and evacuation plans that needs additional study. As Skaer (2011) and Taboda (2011) advocated, the key to informing the public about animal recovery efforts is to inform prior to the tornado season, get the word out immediately following the crisis and continue communicating with those in the disaster area following the crisis. This is a culture and procedural change so it will take multiple messages to get the correct information to the public.

In the years to come it will be interesting to watch how housing all of Kiowa county information sources in one building works. Does this allow the library, the media center, the Extension service, and the historical society the opportunity to work more effectively as partners, or will it simply be four organizations housed in one building working independently?

Having the right people in the right place to implement and disseminate information was critical to KSRE just as Warren's study (2004) suggested, and as LCES learned during the Katrina flooding, the Extension model contributed to the effectiveness of KSRE's tornado response. KSRE worked in collaboration with many local and state agencies, organizations, and entities to assist in the Greensburg recovery efforts. Past relationships with groups, such as Public Square, allowed Extension to provide a multi-layered, multi-faceted response addressing critical human and community needs during desperate times. Additionally, agents and campus specialists established new connections with unfamiliar groups and leaders that allowed KSRE to accomplish more for Kansans just as it did in for LCES and Louisianans (Cathey, Coreil, Schexnayder, & White, 2011).

Regardless of the organization, when a disaster strikes, one of the most important aspects of recovery is going to be the strength of individuals. As Weick (1983) explained, one can best understand the world by becoming a complicated person. Complicated people see more possibilities in situations, thereby being able to both reappraise situations more positively and discover those small changes that could provide remedies without changing too much. Complicated people draw from more hypotheses that bear on a given situation and possess a more complex repertoire of skills. Weick's model is based on the principle of requisite variety. "To regulate any environment, a sensor must be capable of registering as many states as there are states that can occur in that environment" (Weick, 1983, p. 364). As both agents said, their prior experience was critical for them to be able to make sense of what was happening around them and to act in a manner that was professional, resourceful, and timely.

The analogy for Weick's (2001) model of a window ledge becomes more real when applied to what happens during and after a tornado. It more clearly illustrates that learning provides a base similar to a window ledge, and amplifies the fact that the more one learns, the more one knows. The knowing derived from learning expands a person's window ledge; it grows wider and longer. When the individual encounters difficult situations or tough times like the tornado crisis, she won't be forced to jump because she has more options; she can move forward and backward, side-to-side, and at different angles. Walking along the ledge and climbing through a different window are possible maneuvers for the complicated person. The person may decide to jump from the ledge, which demonstrates the essence of being a complicated person. Instead of being forced to jump, the complicated person has options from which decisions about the best action to take are made. Creating complicated employees for KSRE will be critical to the success of agents in future disasters.

Extension administration aided the effectiveness of the KSRE agents in Greensburg by being patient, providing comfort care and by empowering the agents to get the job done on the ground with minimal interference—but with willingness and offers to help in any way necessary. While there are areas for further study and training, Extension proved that by listening to the people in the field and providing for the needs as articulated by the agents, projects can move forward efficiently and effectively. Extension's nationwide organizational structure that hires a diverse staff of people with diverse experiences allows it the ability to benefit from the collective brainpower of all during a crisis. This thrusts Extension into performing a critical information transfer role in rebuilding lives and communities when disaster strikes.

## REFERENCES

- Association of Religion Data Archives. (2008). *National Profiles*. Retrieved December 1, 2008, from <http://www.thearda.com/index.asp>
- Associated Press. (2008a). Damage done: The worst tornadoes. *Topeka Capitol Journal*. Retrieved from [http://www/cjonline.com/stories/062008/kan\\_292967603.shtml](http://www/cjonline.com/stories/062008/kan_292967603.shtml)
- Associated Press. (2008b). Research shows Greensburg, Udall tornadoes eerily similar. *USA Today*. Retrieved from [http://usatoday.com/weather/news/2008-03-03/greensburg-udall\\_N.htm](http://usatoday.com/weather/news/2008-03-03/greensburg-udall_N.htm).
- Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social Research Update*. Retrieved August 1, 2009, from <http://www.soc.surrey.ac.uk/sru/SRU33.html>
- Atkinson, R., & Flint, J. (2003). Sampling, snowball: Accessing hidden and hard-to-reach populations. In R. L. Miller & J. D. Brewer (Eds.), *The A-Z of Social Research: A Dictionary of Key Social Science Research* (pp. 274-280). London: Sage.
- Berg, S. (1988). Snowball sampling. In S. Kotz & N. L. Johnson (Eds.), *Encyclopedia of Statistical Science* (p. 8). New York: Wiley.
- Bosch, K. (2004). Cooperative Extension responding to family needs in time of drought and water shortage. *Journal of Extension*, 42(4). Retrieved September 5, 2008, from <http://www.joe.org/joe/2004august/a3.shtml>
- Buchholz, D. (2008). *The Extension Tuesday Letter*, 14(44). Retrieved September 9, 2008, from <https://intranet.oznet.ksu.edu/tuesday/080916.asp>
- Burnett, J. J. (1998). A strategic approach to managing crises. *Public Relations Review*, 24(4), 475-488.

- Cartwright, S., Case, P., Gallager, T., & Hathaway, R. (2002). Extension's role in responding to community crisis: Lessons from Klamath Falls, Oregon. *Journal of Extension, 40*(6). Retrieved September 5, 2008, from <http://www.joe.org/joe/2002december/a2.shtml>
- Cathey, L., Coreil, P., Schexnayder, M., & White, R. (2011) True Colors Shining Through: Cooperative Extension Strengths in Time of Disaster. *Journal of Extension, 45*(6). Retrieved September 20, 2011 from: <http://www.joe.org/joe/2007december/comm1.php>
- Chatman, E. A. (1987) The information world of low-skilled workers. *Library & Information Science Research, 9*(4), 265-283.
- Chatman, E. A. (1991). Life in a small world; Applicability of gratification theory to information-seeking behavior. *Journal of the American Society for Information Science, 42*(6), 432-449.
- Cholick, F. (2005) *Five-year Work Plan*. Manhattan, KS: Kansas State University Extension Printing Services.
- Cholick, F. (2008). *County Extension Councils and District Governing Boards*. Manhattan, KS: Kansas State University Extension Printing Services.
- Crabbs, M. A., & Black K. U. (1984). Job change following a natural disaster. *Vocational Guidance Quarterly, 32*, 232-239.
- Creswell, J. W. (2005). *Educational research: planning, conducting, and evaluative quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.



- Dervin, B. (1999). On studying information seeking methodologically: The implications of connecting metatheory to method. *Information Processing and Management*, 35, 727-750.
- Dervin, B., Loreman-Wernet, L., & Lauterbach, E. (Eds.). (2003). *Sensemaking methodology reader: Selected writings of Brenda Dervin*. Cresskill, NJ: Hampton Press.
- Dolan, T. G. (2006). Few schools are ready to manage crisis. *Education Digest*, 72(2), 2-8.
- Dombeck, M. (2011). *Defense Mechanisms*. Retrieved September 20, 2011, from [http://www.mentalhelp.net/poc/view\\_doc.php?type=doc&id=4054](http://www.mentalhelp.net/poc/view_doc.php?type=doc&id=4054)
- Dower, D. (1998). Case Study: Employee communications at Kerr-McGee in the aftermath of the Oklahoma City bombing. *Public Relations Quarterly*, 43, 13-19.
- Duggan, F., & Banwell, L. (2004). Constructing a model of effective information dissemination in a crisis. *Information Research*, 9, paper 178. Retrieved August 1, 2009, from <http://InformationR.net/ir/9-3/paper178.html>
- Eddy, E. D. (1957). *Colleges for our land and time*. New York: Harper and Brothers.
- EDEN, (2011). *Reducing the Impact of Disasters Through Education*. Retrieved on September 20, 2011 from: <http://eden.lsu.edu/AboutEDEN/HowEDENWorks>
- Edwards, R. (2008). *The online tornado FAQ*. Storm Prediction Center, National Oceanic and Atmospheric Administration. Retrieved September 5, 2008, from <http://www.spc.noaa.gov/faq/tornado/index.html>
- Ellis, D. (1989). A behavioural approach to information retrieval design. *Journal of Documentation*, 45(3), 171-172.

- Federal Emergency Management Association. (2009). Four phases of emergency management. Retrieved August 1, 2009, from <http://training.fema.gov/EMIWeb/IS/is14/glossary.htm#F>
- Fern-Banks, (2002). *Crisis communications: A casebook approach*. Mahwah, NJ: Erlbaum.
- Finger, S. (2011). *Are Tornado Sirens Used Too Often?* Retrieved September 26, 2011 from: [http://www.nws.noaa.gov/os/assessments/pdfs/Joplin\\_tornado.pdf](http://www.nws.noaa.gov/os/assessments/pdfs/Joplin_tornado.pdf)
- Fink, S. (1986). *Crisis management: Planning for the inevitable*. New York: American Management Association.
- Flick, U. (1998). *An introduction to qualitative research*. London: Sage.
- Gibbons, J. (2011). Talking it Out: September 11 Brings Changes in Trauma Counseling Retrieved October 25, 2011 from: <http://www.k-state.edu/media/newsreleases/aug11/sept1182411.html>
- Goff, B. (2011). Talking it Out: September 11 Brings Changes in Trauma Counseling Retrieved October 25, 2011 from: <http://www.k-state.edu/media/newsreleases/aug11/sept1182411.html>
- Greensburg Chamber of Commerce. (2008). *Emergency-011*. Retrieved December 1, 2008, from <http://www.bigwell.org/govt.html>
- Greer, R., Grover, R. & Fowler, S. (2007). *Introduction to the library and information professions*. Westport, Conn.: Libraries Unlimited
- Haby, J., (2008). Forecasting using the 500 millibar chart. Retrieved December 1, 2008, from <http://www.theweatherprediction.com/habyhings/25/>
- Haney, J. (2008). *Greensburg: The twisted tales*. Newton, KS: Mennonite Press.

- Heinström, J. (2003). Five personality dimensions and their influence on information behaviour. *Information Research*, 9, paper 165. Retrieved August 1, 2009, from: <http://infomrationr.net/ir.9-1/paper165.html>
- Henry, R. E. (2000). *You'd better have a hose if you want to put out the fire*. Windsor, CA: Gollywobbler Productions.
- Kuhlthau, C. C. (1994). *Seeking meaning: A process approach to library and information services*. Norwood, NJ: Ablex.
- Maslow, A. (1970). *Motivation and Personality* (2nd ed.). New York: Harper & Row.
- McDowell, G. R. (2001). Is Extension an idea whose time has come and gone? *Journal of Extension*, 42(6), 1-6.
- Merriam, S. B. (1998). *Qualitative research and case study: Applications in education*. San Francisco: Jossey-Bass.
- Merriam, S. B. (2002). *Qualitative research in practice: Examples for discussion and analysis*. San Francisco: Jossey-Bass.
- Monfredo, W. (2008). Blown away in Greensburg, USA: Prediction and analysis of an EF 5 tornado. *Weather*, 5, 116-120.
- Moustakas, C. (1994). *Phenomenological Research Methods*. London: Sage.
- National Climatic Data Center. (2008). *U.S. tornado climatology*. Retrieved October 16, 2008, from <http://www.ncdc.noaa.gov/oa/climate/severeweather/tornadoes.html>
- National Response Framework (2011). *Homeland Security: National Response Framework*. Retrieved September 20, 2011 from: <http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf>

- National Weather Service, (2011). *National Weather Service Central Region Service Assessment*. Retrieved September 20, 2011 from:  
[http://www.nws.noaa.gov/os/assessments/pdfs/Joplin\\_tornado.pdf](http://www.nws.noaa.gov/os/assessments/pdfs/Joplin_tornado.pdf)
- Newsome, D., Turk, J., & Kruckeberg, D. (2007). *This is PR: The realities of publications*. Belmont, CA: Wadsworth.
- Piotrowski, C., & Vodanovich, S. (2008, Summer). Hurrican Ivan: A case study of university faculty in crisis management. *Organization Development Journal*.
- Ramussen, W. D. (1989). *Taking the university to the people: Seventy-five years of Cooperative Extension*. Ames: Iowa State University Press.
- Richardson, B. (1993). Why we need to teach crisis management and to use case studies to do it. *Management Education and Development*, 24(2), 138-148.
- Riebeek, H. (2005, March). The rising cost of natural disasters. *Earth Observatory*.
- Ripley A. (2011). Why we don't prepare for disasters. *Time*. Retrieved from:  
<http://www.time.com/time/magazine/article/0,9171,1229102,00.html>
- Ripley, A. (2008). *Who survives when disaster strikes and why*. New York: Crown.
- Rogers, E. (1995). *Diffusion of innovations*. New York: The Free Press.
- Sanchez, J. I., Korbin, W. P., & Viscarra, D. M. (1995). Corporate support in the aftermath of a natural disaster: Effects on employee strains. *Academic Management Journal*, 38, 504-521.
- Savolainen, R. (1995). Everyday life information seeking: Approaching information seeking in the context of "way of life." *Library & Information Science Research*, 17(3), 259-294.

- Savolainen, R. (1999) Seeking and using information from the Internet. In T. D. Wilson & T. D. Allen (Eds.), *The context of non-work use: Exploring the contexts of information behavior* (pp 356-370). Proceedings of the 2nd International Conference on Research in Information Needs, Seeking and Use in Different Contexts, Sheffield, UK, August 13-15, 1998. London: Taylor Graham.
- Savolainen, R. (2004). Everyday life information seeking. In M. A. Drake (Ed.) *Encyclopedia of library and information science* (2nd ed.), (pp. 1-9) New York: Dekker.
- Schat, A. C., & Kelloway, E. K. (2000). Effects of perceived control on the outcomes of workplace aggression and violence. *Journal of Occupational Health and Psychology*, 5, 386-402.
- Schouten, R., Callahan, M., & Bryant, S. (2004). Community response to disaster: The role of the workplace, *Harvard Review of Psychiatry*, 12(4), 229-237.
- Schutz, W. (1988). *Profound simplicity*. New York: Prentice Hall.
- Scott, R. (1970). *The reluctant farmer*. Urbana: University of Illinois Press.
- Seeger, M. W., Sellnow, T. L., & Ulmer, R. R (2003). *Communication and organizational crisis*. Westport, CT: Praeger.
- Siegel, D. G. (1994). *Campuses respond to violent tragedy*. Washington, DC: American Council on Education.
- Skaer, C. (Presenter). (2011, September 24). What About the Animals? *Human Animal Bond Symposium*, Kansas State University, Manhattan, KS. (Webcast). Retrieved from <http://ome.ksu.edu/webcast/human-animal-bond/2011/>.

- Stith, B. A., Panzer, A. M., & Goldfrank, L. R. (2003). *Preparing for the psychological consequences of terrorism*. Washington, DC: National Academies Press.
- Stringer, E. (1999). *Action research*. Thousand Oaks, CA: Sage.
- Telg, R., Irani, T., Muegge, M., Kistler, M., & Place, N. (2007). Communication efforts of Florida Extension agents during the 2004 hurricane season, *Journal of Extension*, 45(3),1-14.
- Taboda, J. (Presenter). (2011, September 24). What About the Animals? Human Animal Bond Symposium, Kansas State University, Manhattan, KS. September 24, 2011. (Webcast) Retrieved from <http://ome.ksu.edu/webcast/human-animal-bond/2011/>.
- Thomson, S. (1997). Adaptive sampling in behavioural surveys. *NIDA Research Monograph*, 296-319.
- Tierney, K. J. (2004). Strength of a city: A disaster research perspective on the World Trade Center attack. Retrieved August 1, 2009, from: <http://www.ssrc.org/setp11/essays/>
- Unruh, F. (2007). *Tornado! Up from the debris*. Newton, KS: Mennonite Press.
- Ursano, R. J., & McCarrol, J. E. (2004). Exposure to traumatic stress: The nature of the stressor. In: R. J. Ursano, B. G. McGaughey, & C. S. Fullerton (Eds.), *Individual and community responses to trauma and disaster* (pp. 46-71). Cambridge: Cambridge University Press.
- USDA, (2011). Retrieved September 20, 2011 from:  
[http://www.csrees.usda.gov/qlinks/partners/map\\_lgu\\_1862\\_front\\_12\\_9\\_09.pdf](http://www.csrees.usda.gov/qlinks/partners/map_lgu_1862_front_12_9_09.pdf)

- U.S. Census Bureau, (2008). Kiowa County and Greensburg, Kansas. Retrieved December 1, 2008, from [http://factfinder.census.gov/home/saff/main\\_html?\\_lang=en](http://factfinder.census.gov/home/saff/main_html?_lang=en)
- Vogt, W. P. (1999). *Dictionary of statistics and methodology: A nontechnical guide for the social sciences*. London:Sage.
- Warner, D., & Procacciono, J. D. (2004). Toward wellness: Women seeking health information. *Journal of the American Society for Information Science*, 55(8), 709-730. Retrieved August 1, 2009, from: <http://www3.interscience.wiley.com/cgi-bin/fulltext/107629454/PDFSTART>
- Warren, L. (2004, April 20). Take it to the edge. *Computer Weekly*, 44.
- Weick Karl E. (1983). Stress in Accounting Systems. *The Accounting Review*, LVIII, 350-369.
- Weick K. E. (1998). Improvisation as a mindset for organizational analysis. *Organization Science*, 9, 543-555.
- Weick, K. E. (2001). *Making sense of the organization*. Malden, MA: Blackwell.
- Weick K. E., & Sutcliffe K. M. (2001). *Managing the unexpected: Assuring high performance in an age of complexity*. San Francisco: Jossey-Bass.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409-421.
- Weisaeth, L. A. (1989). A study of behavioral responses to an industrial disaster. *Acta Psychiatrica Scandinavia*, 80, 13-24.
- West, J. (2011). *Kiowa County Media Center*. Retrieved September 20, 2011 from <http://www.nilmt.ksu.edu/projects/greensburg/docs/kcmc.pdf>.

- Whiting, L. R., Tucker, M., & Whaley, S. (2004). Level of preparedness for managing crisis communication on land-grant campuses. *Journal of Applied Communications*, 88(3), 7-20.
- Wichita Eagle. (2009). Kansas tornadoes put in perspective. *The Wichita Eagle*. Retrieved from <http://www.kansas.com/2009/04/05/761342/kansas-tornadoes-put-in-perspective.htm>
- Williams, R. L. (1991). *The origins of federal support for higher education: George W. Atherton and the land-grant college movement*. University Park: The Pennsylvania State University Press.
- Wilson, T. D. (1999). Models in information behaviour research. *Journal of Documentation*, 55(3) 249-270.
- Wooten, P. (2011). *Tragedy, Laughter, and Survival*. Retrieved from [http://aath.org/articles/art\\_wootdunk1.html](http://aath.org/articles/art_wootdunk1.html).
- Wootton, R. (1996). *Focus externally—align internally*. Manhattan, KS: Kansas State University Extension Printing Services.
- Yin R. K. (2003). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.



APPENDIX A  
ACRONYMS

## ACRYONMS

ASPR	Assistant Secretary for Preparedness and Response
AVMA	American Veterinary Medical Association
CSREES	Cooperative State Research, Education and Extension Service
EDEN	Extension Disaster Education Network
EFNEP	Expanded Food and Nutrition Extension Program
EFS	Enhanced Fujita Scale
ESF	Emergency Support Function
ICS	Incident Command System
KSRE	Kansas State Research and Extension
LCES	Louisiana Cooperative Extension Service
NCR	North Central Region
NDMS	National Disaster Medical System
NRF	National Response Framework
NVRT	National Veterinary Response Teams
OPEO	Office of Preparedness and Emergency Operations
USCRES	United States Cooperative Research Extension Service
VMAT	Veterinary Medical Assistance Teams

APPENDIX B  
OPEN-ENDED INTERVIEW QUESTIONS

## OPEN-ENDED INTERVIEW QUESTIONS

## Questions Relating to the Prodromal Stage of the Tornado Crisis

1. Thank you for agreeing to participate in this study. Please share with me a little about you and your family members.
2. Tell me about your job.
3. What activities were you involved with in your community before the tornado?
4. Where did you live prior to the tornado?
5. Where was each of your family members preceding the tornado?
6. Were you ever involved in a tornado before? *If yes, ask for interviewee to describe the event.*
7. Were any of your family members? *If yes, ask for interviewee to describe the event.*
8. What prior training did you have about tornado safety? *If yes, follow up on what kind and conducted by what entity.*
9. Did you have a tornado crisis plan for your family? *If yes, ask for interviewee to describe the plan.*
10. Did you as an Extension agent conduct tornado safety training workshops for your community? *If yes, ask for interviewee to describe the event.*
11. Where did you get your weather information prior to the tornado?
12. What were your favorite sources of information for family issues prior to the tornado?

13. What were your favorite sources of information about community issues prior to the tornado?
14. Where did you get your information as an Extension agent prior to the tornado?
15. Describe your attitude toward tornadoes and tornado safety prior to the tornado.
16. What other things would you like to share?
17. Are there others that I should talk with about this stage of the tornado crisis?

#### Questions Relating to the Acute Stage of the Tornado Crisis

1. Describe how you became aware that severe weather was in your area?
2. What was your information source?
3. Did you consult other sources of information to verify the severity of the storm?
4. Where were you at this time?
5. Where was your family?
6. Did you have any people involved in Extension programs that were happening at that time that you were responsible for? If yes, please describe the events and where they were taking place.
7. Did you call members of your community to warn them or check on them preceding the storm?
8. Describe the tornado and the moment you knew it was striking your area.
9. Were you still following your information source at that time?
10. What did you do when you thought the tornado had stopped?
11. Describe how you decided what to do next at that point.

12. Immediately following the tornado, what type of information were you seeking? Were you successful in obtaining it? If so, how?
13. What communication channels were available to you immediately following the tornado?
14. When did you start becoming concerned for others outside your immediate family? What did you do?
15. When did you start to think about what you would have to do now as an Extension employee? What did you do?
16. Where did you go to spend the rest of the night following the tornado?
17. Did you have calls from other members of the community? What did they need?
18. Did you receive calls from Extension colleagues? What did they say?
19. What other things would you like to share?
20. Are there others that I should talk with about this stage of the tornado crisis?

#### Questions Relating to the Chronic Stage of the Tornado Crisis

1. When did you feel that the clean-up phase began?
2. Describe your communication options at that point?
3. What were your most often used sources of information during this time?
4. Who were your “go to” people during this time?
5. As a community member, when did you start helping others?
6. When did you start doing your Extension job again?
7. What were your goals for your job at this time?

8. Did you have an office?
9. Were people coming to you for information about how to deal with the aftermath of the tornado at this time? If yes, where were you getting the information they requested?
10. If you had to pick your best source of information at this time, what or who was it? Why was it so valuable?
11. If you had to pick your worst source of information, what was it? Why was it not what you needed at that time?
12. Describe to me how you felt trying to participate as an individual, as a family member, as an employee and as a community member during this time.
13. What was the most challenging aspect?
14. What would have made this easier?
15. What other things would you like to share?
16. Are there others that I should talk with about this stage of the tornado crisis?

#### Questions Relating to the Chronic Stage of the Tornado Crisis

1. Describe the moment you became aware that the crisis was over and healing was underway?
2. Where are you now in relationship to where you were before the tornado?
3. What were the greatest lessons you learned from this crisis and why?
4. What are you doing differently regarding weather and crisis management that what you were doing before the tornado?
5. You know the old saying, if I knew then, what I know now? What would that be?

6. Can you give me a list of things that you personally learned during this crisis about you as an individual?
7. What did you learn as a family member?
8. What did you learn as an Extension employee?
9. What did you learn as a community member?
10. What have you gained from this experience?
11. What actions would you take if you know of colleagues that are experiencing the aftermath of a tornado? Is that different than what you might have done before the tornado?
12. What is the one lesson you want others to take away from your experiences?
13. How did your use of information change over this time period?
14. What is now your greatest source of information?
15. Who are your “go to” people now?
16. From crisis often comes opportunity, what was yours and how did you take advantage of the opportunity?
17. What other things would you like to share?
18. Are there others that I should talk with about this stage of the tornado crisis?



APPENDIX C  
INFORMED CONSENT DOCUMENT

## Informed Consent Document

The Department of Library and Information Management at Emporia State University supports the practice of protection for human subjects participating in research and related activities. The following information is provided so that you can decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time, and that if you do withdraw from the study, you will not be subjected to reprimand or any other form of reproach. Likewise, if you choose not to participate, you will not be subjected to reprimand or any other form of reproach.

This study will examine the information Kansas State Research and Extension (KSRE) can glean from the experiences of the surviving Greensburg residents who rebuilt their individual lives as well as their shared community following the 2007 tornado. By learning from this crisis event, KSRE can better prepare agents to respond to future crisis situations and support their efforts to empower community members to live happier, healthier, and easier lives. The interviews could take a few hours over a series of sessions.

In this case study, you will be interviewed to determine how you made sense of your situation. Informational needs, seeking behavior and information satisfaction will be explored. The data gleaned from the interviews, observational field notes, and archival sources will be analyzed first to find the areas of cognitive dissonance and then sorted into four categories: (a) what information was needed, (b) where the information was found, (c) the value or lack of value of the information, and (d) what information was needed but never obtained.

There should be no risk or discomfort at any time during this study. You are free to decline to participate in the study at any point.

By learning from this crisis event, KSRE can better prepare agents, such as you, to respond to future crisis situations and support their efforts to empower community members to live happier, healthier, and easier lives.

In accordance with the Emporia State University Institutional Review Board, this study will comply with the rules for the ethical treatment of human subjects and maintenance of confidentiality of records. The researcher will adhere to specific guidelines: (a) permission to conduct the research will be requested from the local KSRE program located on the campus of Kansas State University, (b) objectives of the study will be explained to the study participants and a signed letter of consent to participate in the study will be secured from each agent, (c) pseudonyms will be assigned to the participating agents to ensure anonymity during data collection and analysis processes, and (d) Institutional Review

Board (IRB) approval to conduct the study will be obtained before beginning data collection.

The researcher will transcribe the audio taped interviews and maintain observational field notes. The researcher will maintain raw data from the transcribed interviews and field notes in a fireproof locked cabinet for five years at the researchers' home office. At the conclusion of the five-year period, all data will be destroyed.

Questions can be directed to Rhonda Atkinson at [ratkinso@ksu.edu](mailto:ratkinso@ksu.edu), or by calling 785-765-3879. You may also call the School of Library Sciences and Information Management at 620-341-5203

*"I have read the above statement and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach."*

\_\_\_\_\_

Subject

\_\_\_\_\_

Date

\_\_\_\_\_

Parent or Guardian (if subject is a minor)

\_\_\_\_\_

Date