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# Impact of Past Experiences with Tornadoes on Future Decisions in Nebraska

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## Introduction

### Background

A large destructive tornado hit the town of Joplin, Missouri on May 22, 2011. The number of fatalities was one of the largest seen in recent years. This fact led a group of researchers associated with the National Weather Service to talk with victims. One of the most significant findings from their conversations was that many people needed multiple sources of information in order to take action. This project builds on this finding by examining how past experiences can affect the number of steps and information sources needed in the process of taking shelter during a tornado warning.

### Questions

1. How do past experiences with tornadoes impact an individual's decision to take shelter?
2. Does having past experience with tornadoes decrease the number of signals a person needs in order to take shelter?
3. Does the impact of past experiences with tornadoes change over time? Does the impact change with deeper ties to the tornado's destruction?

## Methods

The towns from which residents were selected were chosen based on the following requirements:

- In the state of Nebraska
- Experienced a tornado in the past
  - Selected a recent event and an older event to study the time factor
- Population less than 500

Residents were selected from the list using a random number generator. The researcher called selected residents to ask if they would be willing to participate. Times and locations to meet in person were agreed upon with those who accepted the invitation. The researcher asked questions and recorded the resident's answers with an audio recorder or by hand during the interview. The questions were broken into three groups: background information, proposed situation, and past experiences. A total of 11 interviews were completed in St. Helena and 9 interviews were completed in Pilger. Interviews are now being analyzed to look for trends and answers to the above-listed research questions. Analysis methods include comparison of interviewee responses and identification of key words or phrases.

St. Helena, Nebraska  
Tornado – Late 1960s

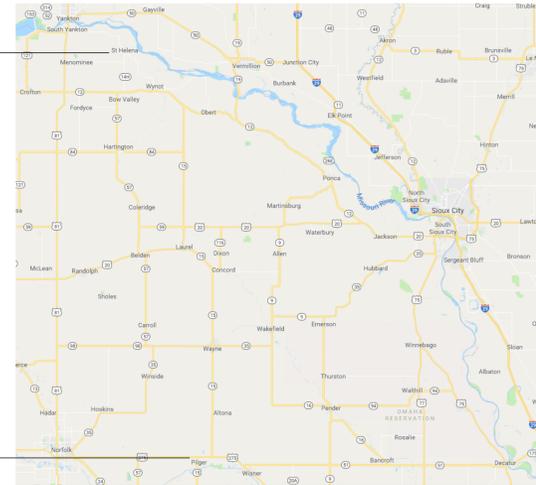


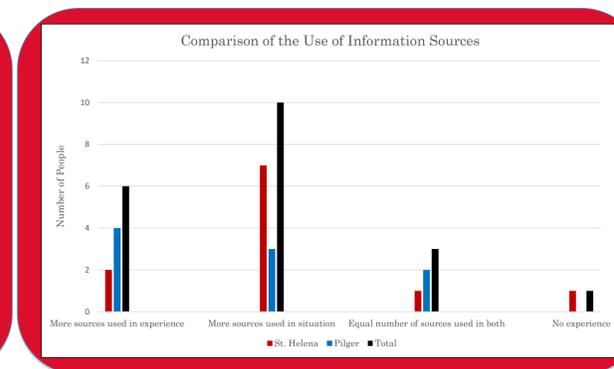
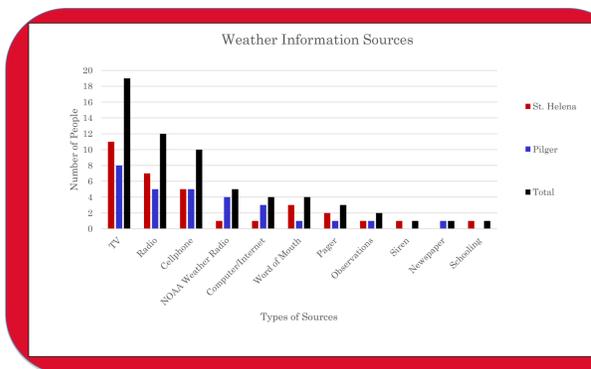
Image: Map of towns involved in the research project

Pilger, Nebraska  
Tornado – June 16, 2014



Image: Two tornadoes near Pilger, Nebraska on June 16, 2014  
Photo Credit: Meteorologist Tony Laubach

## Preliminary Results



## Preliminary Conclusions

Past experience impacts future decisions.

Those with a very recent experience, such as those who experienced the Pilger tornado, were much more likely to vocally call upon their past experience when stating what they would do in the given situation without prompting. This fact suggests that time since a past experience is important for determining how effective the experience is in influencing future decisions.

The television is the most common information source among interviewees. It is followed by radio and cellphones. The NOAA Weather Radio was a particularly common source among Pilger residents. Several residents indicated that these were given to residents after the tornado event in 2014. Some had not used or even owned one prior to the event, but now it has become one of their sources of weather information.

Residents in St. Helena were more likely to use more sources in the proposed situation than they had in past experiences. Residents in Pilger, however, were more likely to use more sources in their past experiences than in the proposed situation. This fact would suggest that the Pilger residents' past experience more effectively reduced the number of information sources needed by the residents.

## Future Work

Finish transcribing all interviews

Continue analyzing data, especially the new information gained from transcription

Reanalyze data to ensure correct conclusions

Converse with National Weather Service and Emergency Management officials about the results and obtain feedback and advice for future research

Present results at the Nebraska Academy of Sciences Conference, for my undergraduate Honors thesis, and the UNL Undergraduate Creative Activities and Research Experience (UCARE) Spring Research Fair

Publish results in my undergraduate thesis and a scientific journal

## Acknowledgements

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