Eye Tracking and Decision-Making in a Hypothetical Severe Weather Event.

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Inadequate warning systems are a major factor contributing to many fatalities and injuries during severe weather situations (Balluz, Schieve, Holmes, Kiezak, & Malilay, 2000), therefore the National Weather Service (NWS) continues to update warning systems and methods to better suit a wider range of individuals.

Previous findings have positively identified education level, having a basement, hearing a warning siren, having a household response plan, awareness, comprehension, and response to severe weather warnings as factors associated with shelter-seeking behavior (Ash, Schumann, & Bowser, 2013; Senkbeil, Rockman, & Mason, 2012; Sherman-Morris & Brown, 2012).

METHODS

1. Students from the University of North Alabama were recruited to participate. Individuals were randomly assigned to one of six groups.
2. Each condition had a varying levels of information regarding a tornado scenario.
3. Participants questioned during eight intervals.
4. Eye-tracking equipment utilized.

RESULTS

Leavitt (2014)

• Shelter Seeking
  • Significant differences between low/no map and mod/map, between low/no map and high/no map, and between low/no map low/mod/high information
  • Fewer sheltered and remained sheltered in low information conditions than in others
• Perceived Danger
  • Those receiving low information perceived less danger than mod/high conditions
  • Influence of the map unclear
• Storm Distance Estimate
  • Significant difference of accuracy between map/no map conditions
  • No significant differences between moderate and high conditions across the board

Current Study - Expected Results

• Shelter Seeking, Perceived Danger, Storm Distance Estimate
• Similar results to Leavitt (2014)
• Eye Tracking
  • Eye tracking will reveal that participants in map conditions attend more to the visual rather than written information
  • No significant differences between moderate and high conditions are expected

Materials

Demographics
- Eighteen questions
- Race, gender, age
- Severe weather experience

Tornado Scenario
- Severe weather targeting university
- Eight intervals spanning a workday
- Five maps with tornado progress
- Low/Mod/High Information

Questionnaires
- Presented after each interval
- Ten questions
- Shelter-seeking behavior and risk assessment
- Personality traits
- Risk-taking
- Harm-avoidance
- Thrill-seeking

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