Information insight
What do people need and when do they need it?

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Overview

- Lots of work on what information meteorologists can provide
  - At different points in the event timeline (e.g., 4 days out, 3 hours out, 15 mins out)

- Less work on what information people use to make decisions
  - Might be helpful when developing new forecasting tools, communication products, etc.

- We aim to investigate:
  - What information people want (experiment 1)
 - When in the event timeline they want it (experiment 2)

The Severe Weather and Society Survey

- A yearly survey of the US public that systematically measures public reception, understanding, and response to severe weather forecasts

- Includes two types of question:
  - Repeat questions that measure core concepts
  - New questions that measure emerging topics, interests, and challenges (probability communication, overnight warnings, COVID-19)

- 2021 sample: 1550 US adults

Eastern Region
Southern Region
Central Region
Western Region
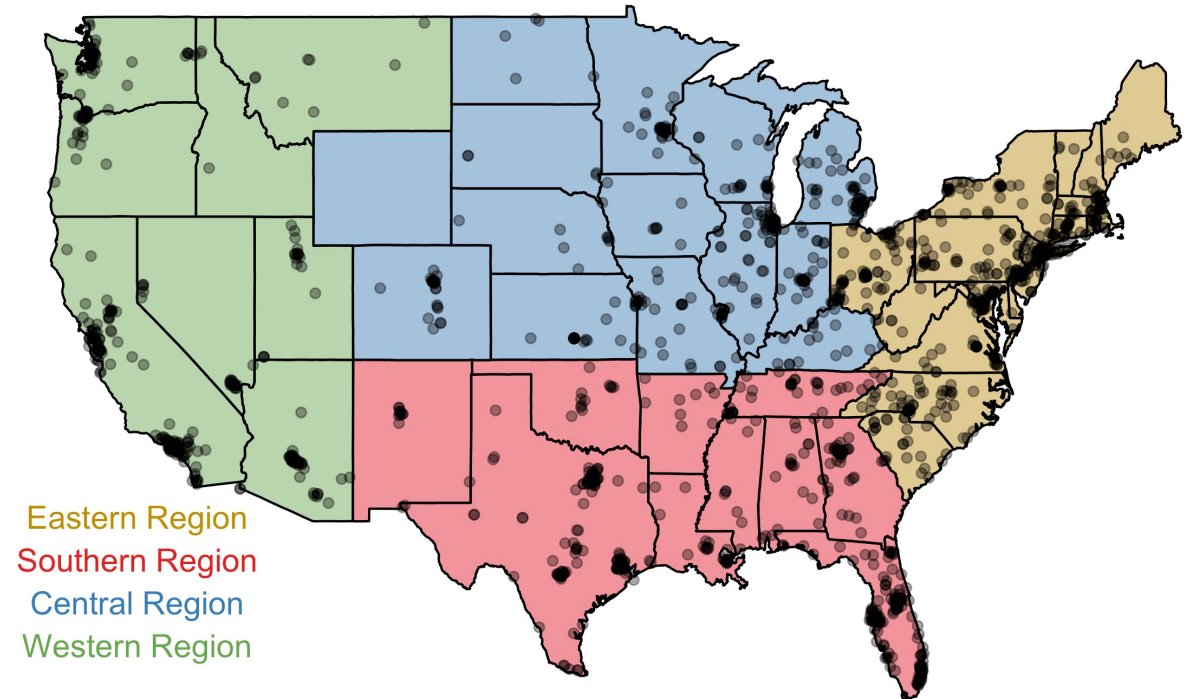
- Similar to the Wx Survey, but focused on tropical cyclones and hurricanes

- Question themes:
  - Reception, understanding, response to TC forecasts
  - Understanding of probabilistic forecasts
  - Numeracy, "weather numeracy"

- 2021 sample: 1550 US adults

Eastern Region
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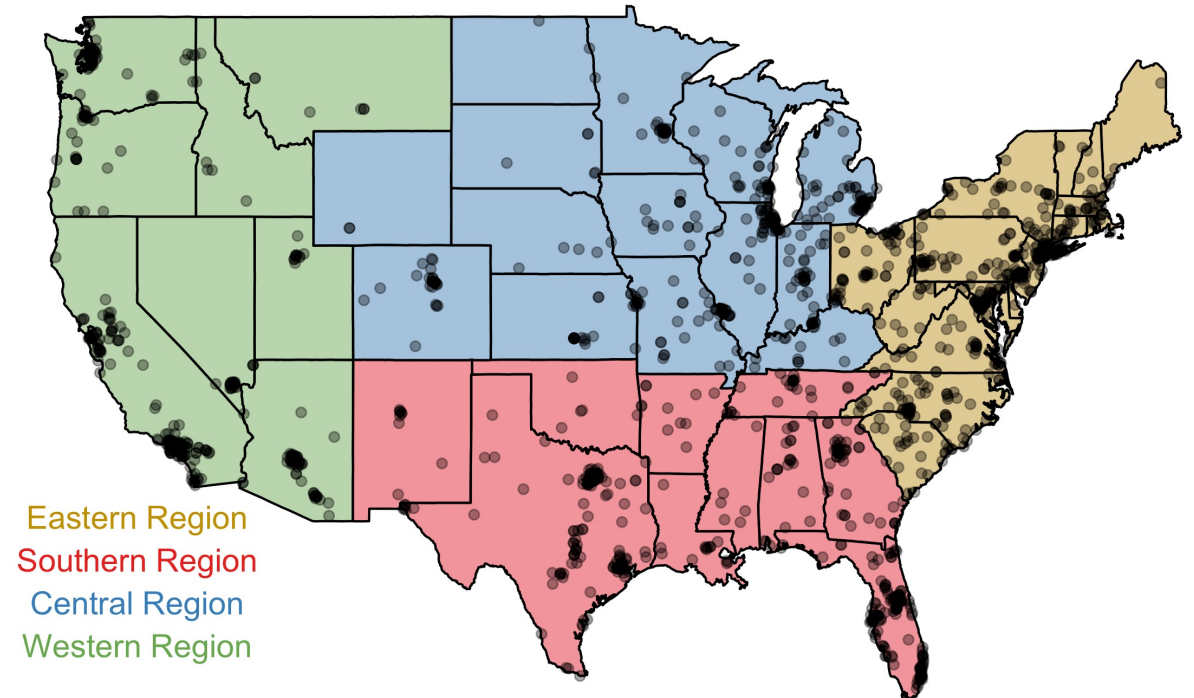
Experiment 1: what information do people want?

Severe weather [hurricane] forecasts often include multiple pieces of information. We want to know how important each of the following pieces of information is to you.

Please drag the boxes below to rank each piece of information from most important (top) to least important (bottom).

- **Location:** what area is the storm going to affect?
- **Timing:** when is the storm going to happen?
- **Chance:** how likely is the storm to occur?
- **Severity:** how intense is the storm going to be (for example: wind speed, hail size, amount of rain)?
- **Impacts:** how might the storm impact you and surrounding areas? (for example: poor visibility, traffic delays, power outages, property damage)
- **Protective actions:** how can you stay safe during the storm? (for example: slow down when driving, stay inside, seek shelter)

[Severe weather/Hurricane] forecasts often include multiple pieces of information. Please rank each piece of information from most important to least important.
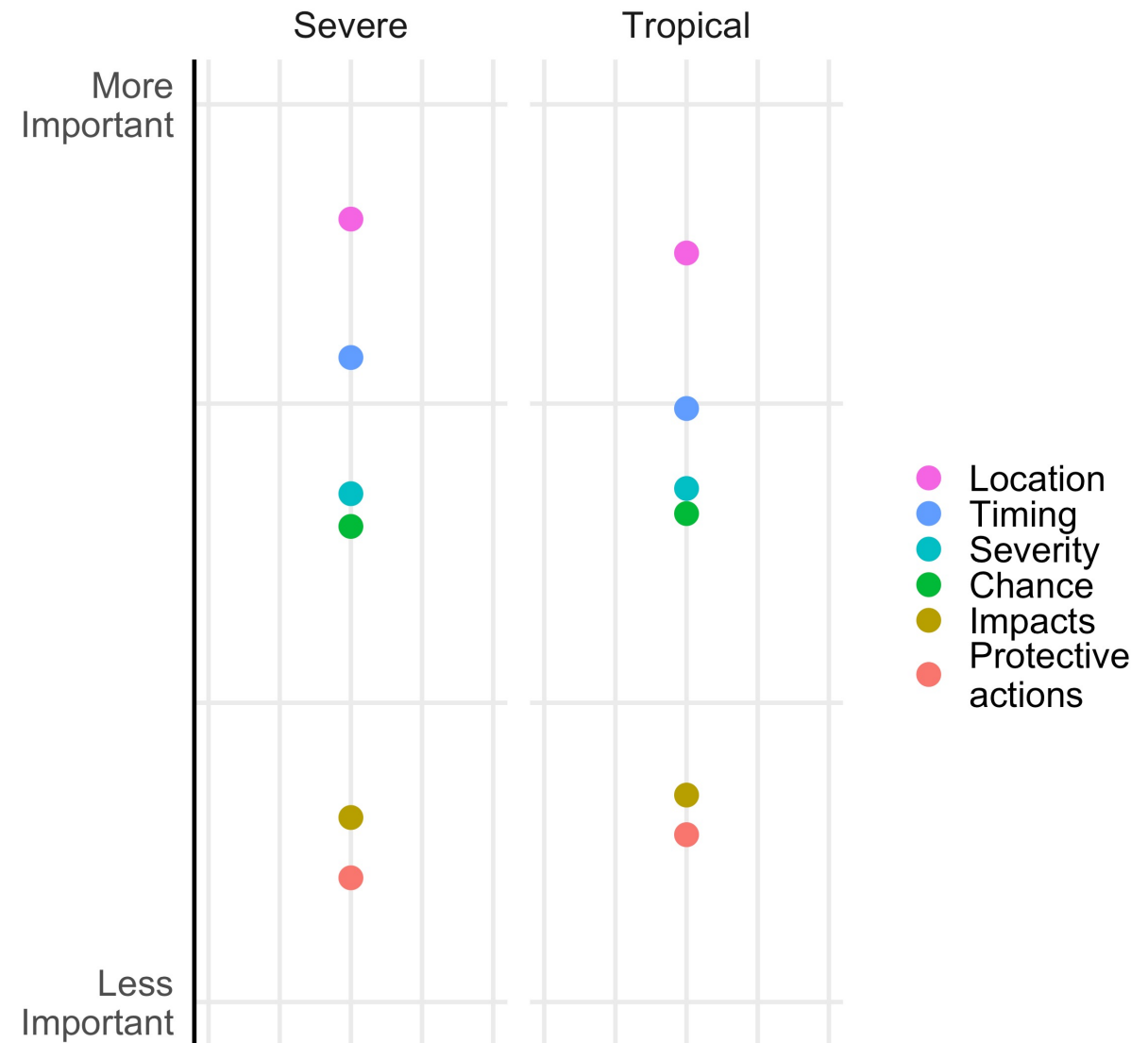
Experiment 2: when do they want it?

Interesting to see how people rank different pieces of information, but do those rankings change along the event timeline?

Survey experiment:

*Some people look for different kinds of information at different points in time. In the next few questions, we are going to give you a timeline and ask you to indicate the type of information that is **most important** at each point in time.*
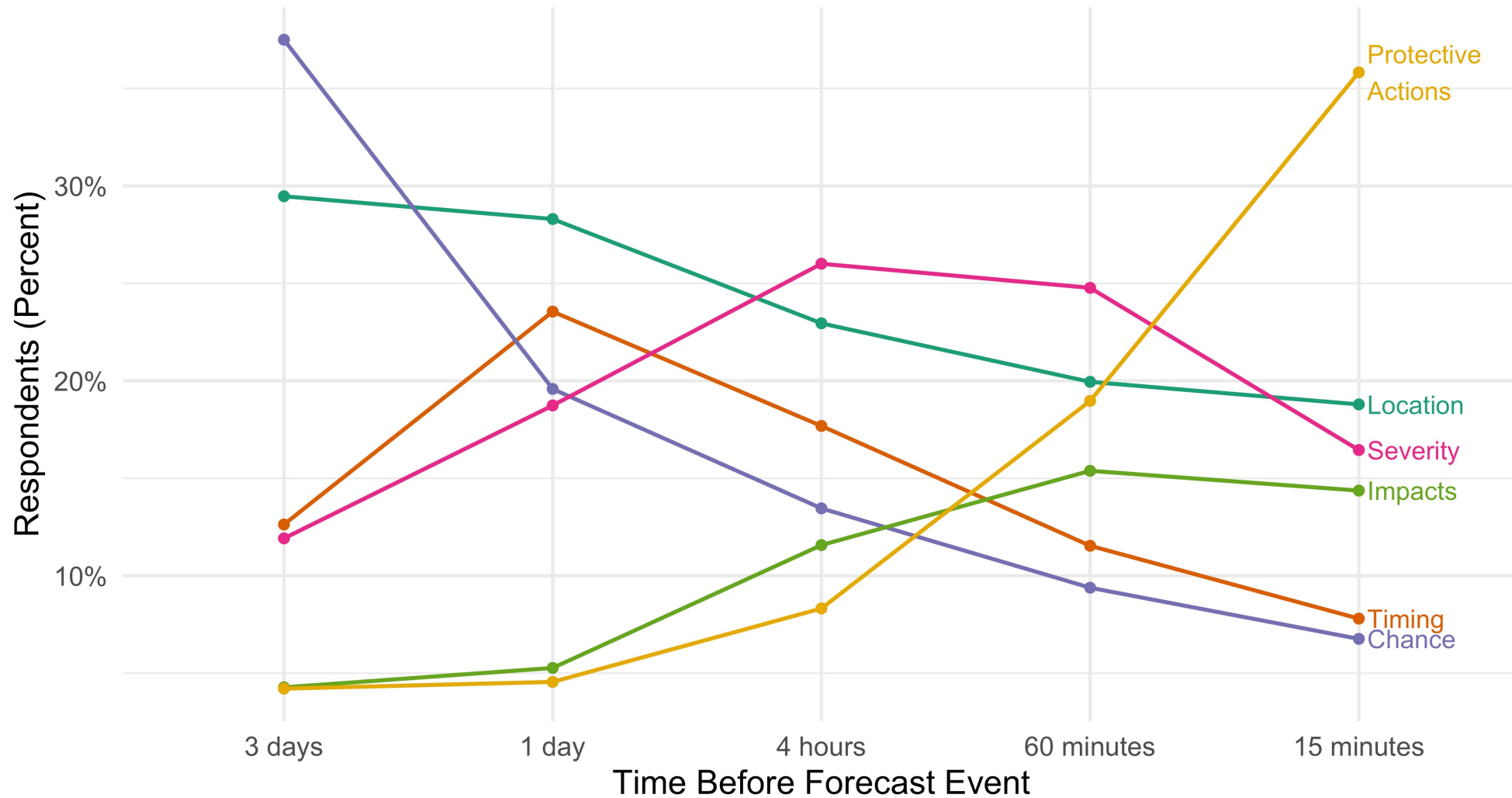
Severe weather:
- *3 days before the storm*
- *1 day before the storm*
- *4 hours before the storm*
- *60 minutes before the storm*
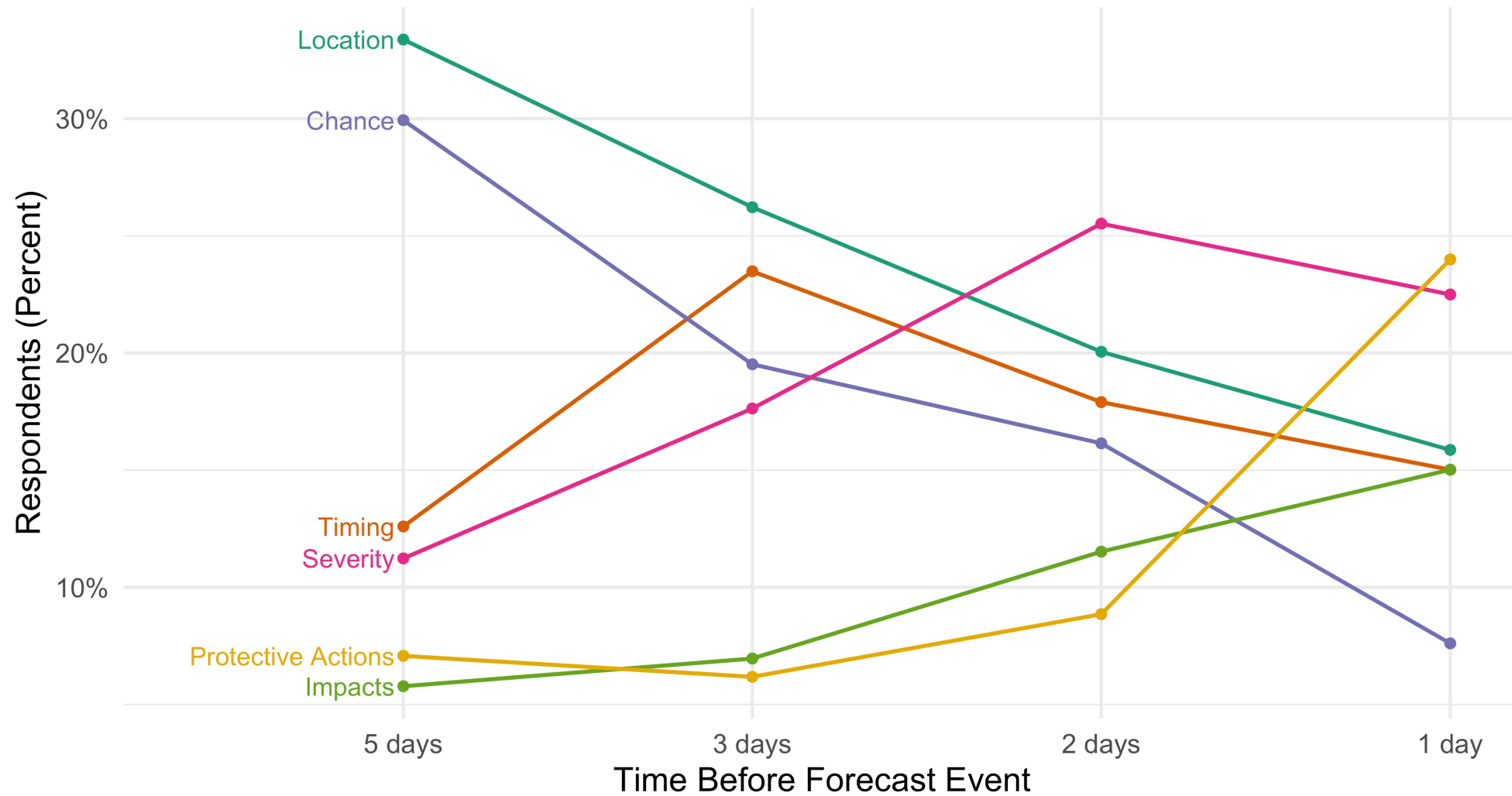- *15 minutes before the storm*

Tropical cyclones:
- *5 days before the storm*
- *3 days before the storm*
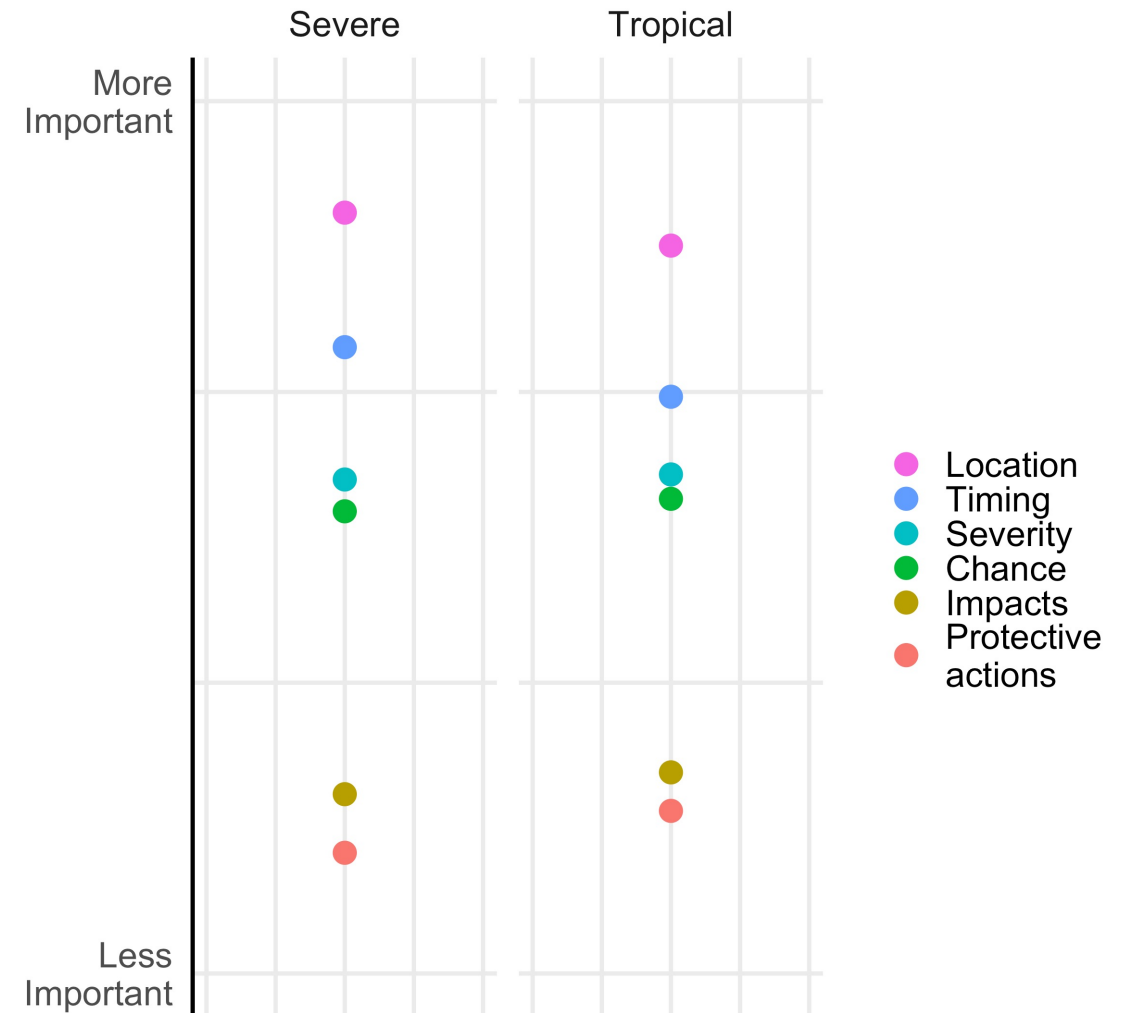- *2 days before the storm*
- *1 days before the storm*

What does this mean?

- People first seek out the "will it happen" information
  - Chance, location (if it's not my location, I don't need to worry)

- Then they seek out the other pieces of information
  - When, how bad, and what should I do?

- Timing information is important!
  - Ranked the second most important
  - Often the most difficult to include in forecasts

- Investigate other hazards
  - Winter weather

- Look more specifically at severe weather event information needs
  - Using survey data **and** social media data

Category	Example Tweets
Chance	What are the tornado probabilities?
Location	What's it looking like for PA? Keeps changing every few hours.
Severity	Would the possible tornadoes be weak or is that impossible to figure out?
Timing	When will these storms hit southeast Wisconsin […]?
Impacts	What about Cobb County? What are the impacts going to be?
Protective Actions	It looks like MS is going to get hammered. Do I need to keep my kids home from school?

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