

# CONNECTING EARTH AND SKY: USING CULTURAL MODELS TO UNDERSTAND AND COMMUNICATE

(WITH NATURAL CYCLES CLIMATE SKEPTICS)

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# Natural Cycles Skepticism

**CYCLONE**  
85  
WORLD'S FASTEST  
WOODEN COASTER

# Cultural Models

Cultural models are presupposed, taken-for-granted models of the world that are widely shared...by the members of a society and that play an enormous role in their understanding of that world and their behavior in it.

- Come from lived and learned experiences
- Resistant to large changes
- Can be motivating when connected to emotions



# Folk Models

- Common sense explanations
- Differ from scientific explanations
- Examples
  - Thermostats
  - Human circulatory system
  - Comparative folk models of the mind



# Natural Cycles Folk Model

I believe we have climate change, technically. I don't know if that's what you're getting at or not. I'm not necessarily a global warming person, but climate change I think is a reality. I think it's a natural cycle. We've seen it. What a lot of people fail to recognize is the same cycles we're seeing now, that people are trying to politicize, have occurred in **generations** and **decades** and **centuries** past over and over.

# Analogic Thought Powers Cultural Models

- $A:B::C:D$
- Logical statements of relationships between entities in a known domain (base) to relationships between entities in an unknown domain (target).
- Core of cognition – Hofstadter and Sander

# Explanation Through Analogy

People talk about the '30s...and all the dust storms and everything, but it was actually worse in the '50s, and '10, '11, '12 was the worst we've ever seen. Of course, the bounce-back [effects] from those weather events, like the drought of 1955, 6, and 7 were extreme, terrible. It started raining again in 1957, and the best quail crop we ever had was in 1958. This past fall, weather conditions coming off the drought of '10, '11, '12, '13, started raining again in '14. 2015 was the best quail year we've had in 20 years.

The extreme weather and recovery (A) in the past (B)  
is like  
the extreme weather and recovery (C) in the present (D).

# Offers support for the model

- Southern Plains - rough weather and rapid changes are normal.
- Much Western scientific knowledge is arranged in cycles.
  - Hydrological cycle, citric acid cycle, calendars, and seasons.
  - El Niño-Southern Oscillation.

## Pitfalls

Ignores changes in our relationship with the environment and level of technology since 1930.

# Connecting Earth and Sky

- 63% - believe human activity is the cause of the recent increase in earthquakes.
- 60% - accept mainstream climate science.
- 15% - think that wastewater injection is responsible for the increased rate of earthquakes, but do not believe in anthropogenic global warming.
- Deep well injections (A) are to earthquakes (B) what greenhouse gas emissions (C) is to climate change (D).
- Of this group, 55% ( 8% of state population - 323,000 people) hold a worldview that may be amenable to change through analogy.

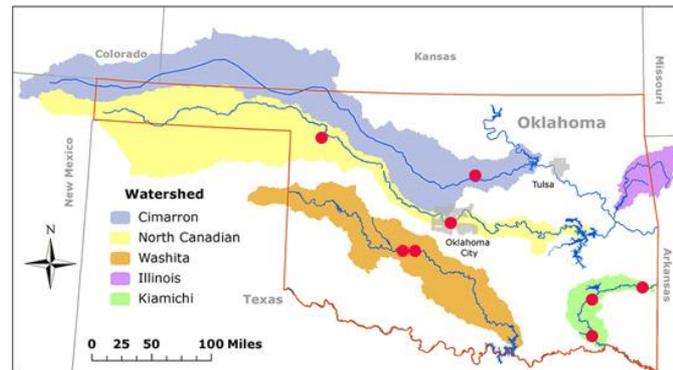
# Connecting Earth and Sky



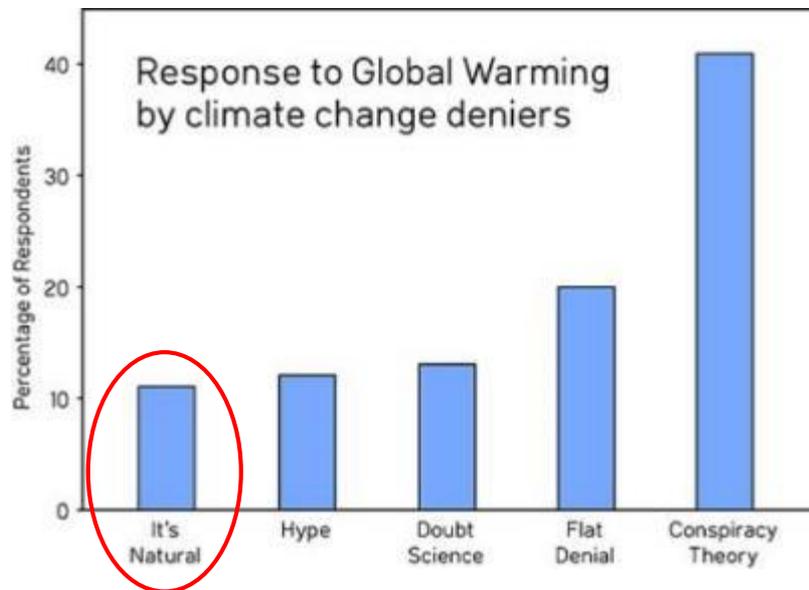
# Data and Methods

## OSU Interviews with Emergency Officials and Land Managers

- 2013-2017
- 5 different watersheds
- Semi-structured interviews, 203 people in 177 interviews
- Recorded and transcribed
- Data from OU survey



# Different Kinds of Skepticism



Smith & Leiserowitz, 2012

- Scheufele – not an information deficit
- Smith and Leiserowitz – conspiracy theorists think climate science information is part of the conspiracy
- Dietz – Science (facts) are interpreted by public in field of values.