

Lies from the Pits of Hell? Examining Attitudes Toward and Knowledge of Evolution Across the United States

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Continued Opposition to Evolution

“All that stuff I was taught about evolution, embryology, Big Bang theory, all that is lies straight from the pit of hell”

-Rep. Paul Broun (R-GA)
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House Committee on Science, Space and Technology member

- **Although extreme, Rep. Paul Broun’s opinion is not uncommon.**
 - » In attitudes toward evolution, the U.S. is ranked second to last, only surpassing Turkey, in an examination of 34 prominent countries (Miller et al., 2006)
 - » Decrease in public acceptance in past 20 years (Miller et al., 2006)
 - » 46% find creationist view closest to personal views (Newport, 2012)

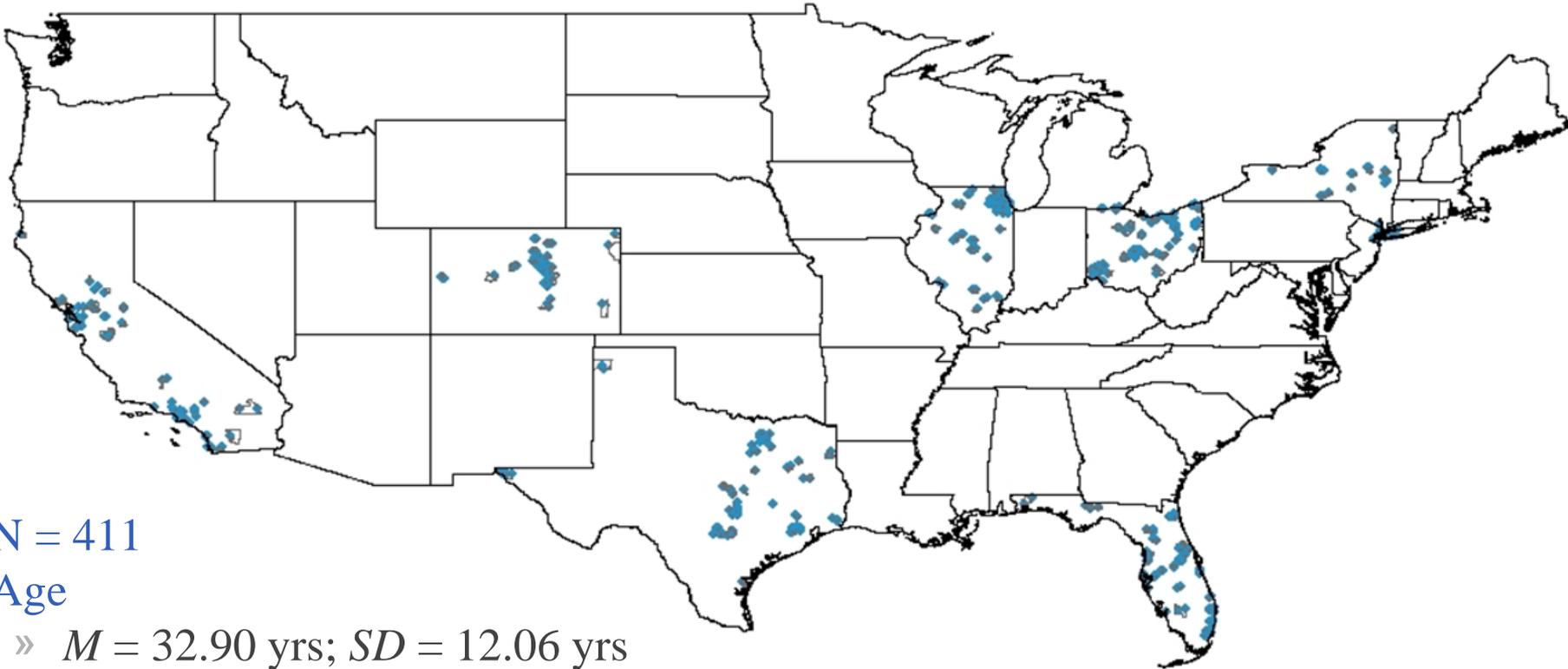
Examining Attitudes Toward Evolution

- Past research with KU sample (Hawley et al. 2011):
 - » Demographic variables are **not** strong predictors
 - Gender, high school size, number of siblings, parents' education, rurality of hometown
 - » Openness to experience (personality) accounts for the most variability
 - Intellectual curiosity and preference for variety
- Current Study:
 - » How do attitudes toward evolution in each state vary across the U. S.?
 - » Examine U.S. residents responses to depict the landscape of attitudes toward evolutionary theory.

Methods

- Procedure
 - » Collected 60 individuals per state for 7 states via Amazon Mturk
 - » Participants completed online survey (~20min) completed via Qualtrics
 - » Participants remunerated \$0.50
- Measures
 - » Demographic information, including state and zip codes
 - » Evolution Attitudes and Literacy Survey- Short Form (EALS-SF)
 - 1 (*Strongly Disagree*) – 7 (*Strongly Agree*) Likert scale
- Analyses
 - » ArcGIS used to create a layered thematic map for two EALS-SF constructs:
 - Creationist Reasoning
 - Knowledge/Relevance of Evolution
 - » Examined differences in attitudes between states via random effects ANOVA

Participants



- $N = 411$

- Age

 - » $M = 32.90$ yrs; $SD = 12.06$ yrs

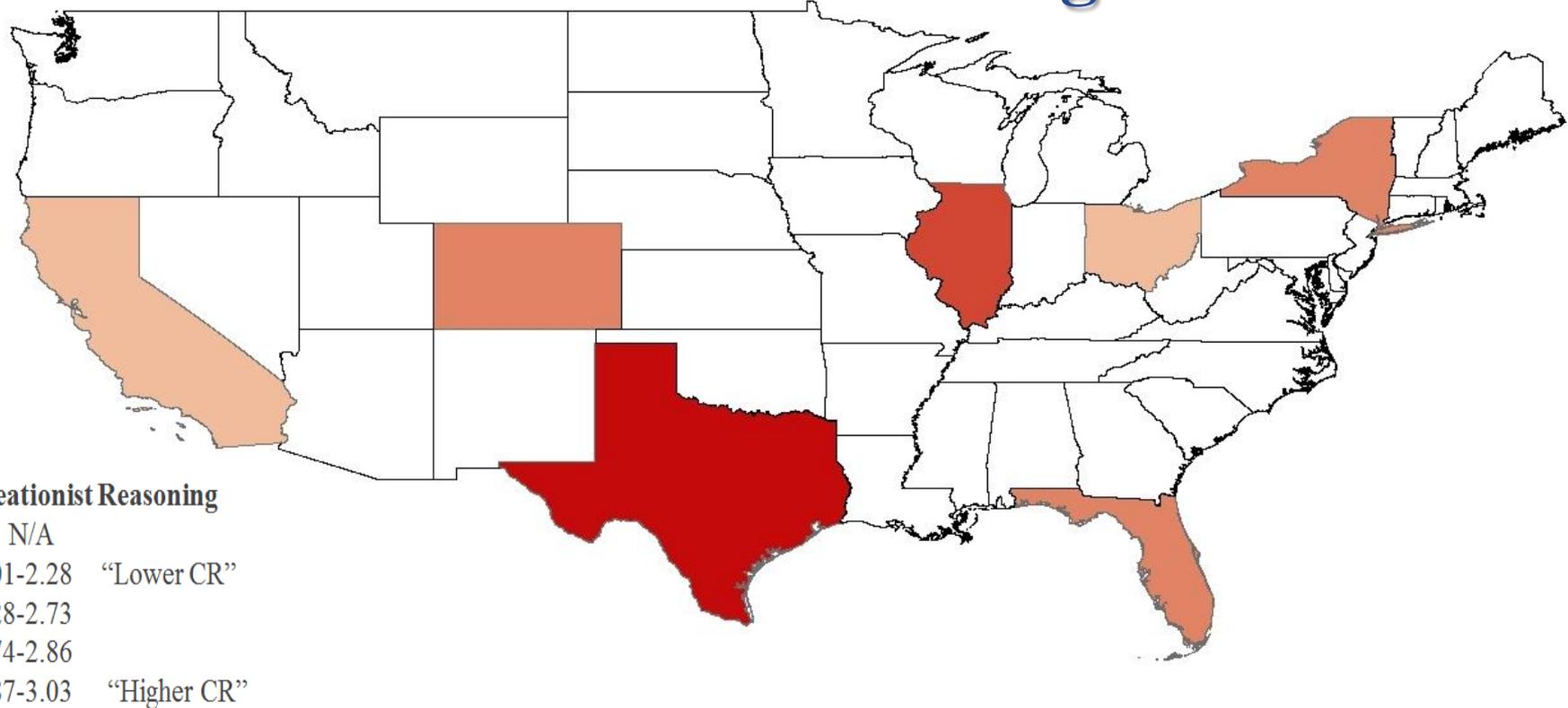
- Gender

 - » $n = 207$ (51.11%) Men; $n = 198$ (48.89%) Women

- Education

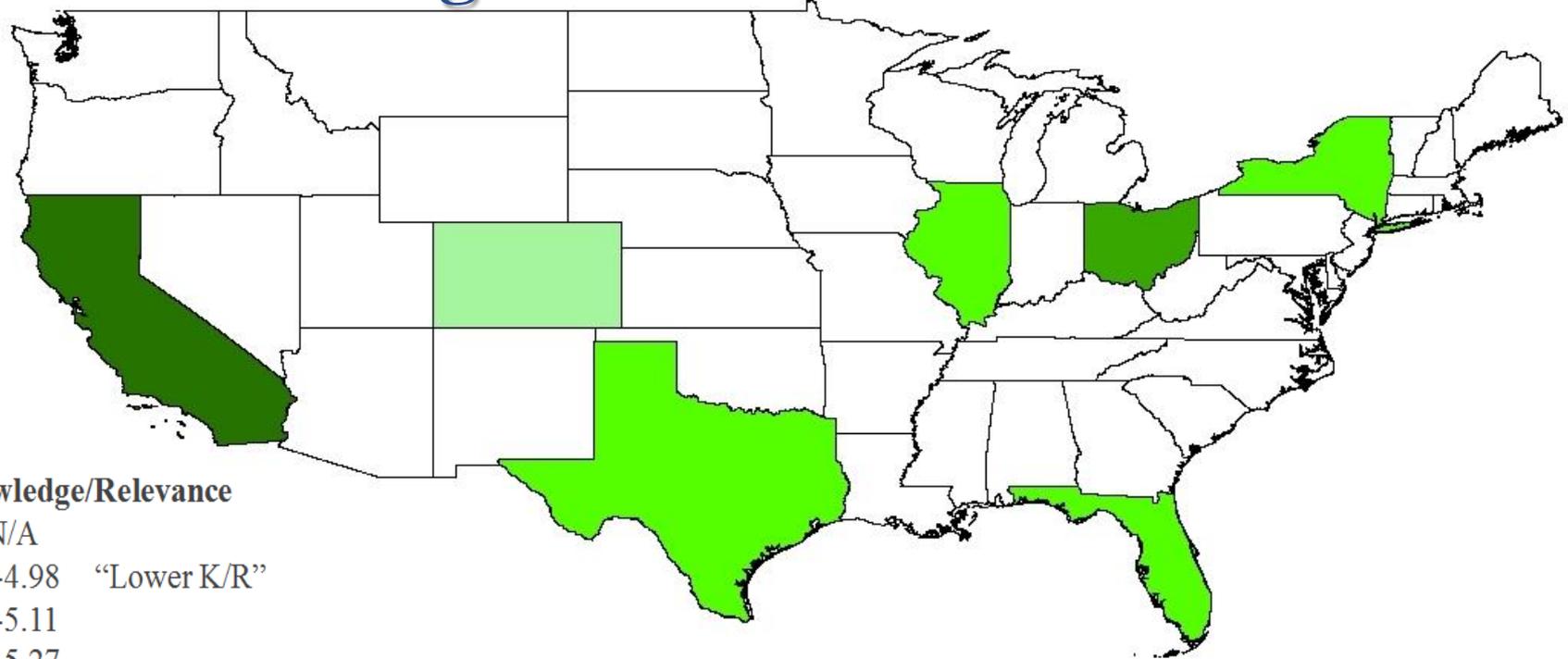
 - » $n = 153$ (37.59%) 2 yr. college degree, $n = 108$ (26.54%) H.S. Diploma/G.E.D.

Creationist Reasoning



- Color coding via Jenks method with 5 breaks
- Significant differences between states, $F(6,397) = 2.36, p < .05$
- Specifically, Tukey post-hoc tests reveal CA ($M = 2.03$) significantly less creationist reasoning than TX ($M = 2.83$)

Knowledge/Relevance of Evolution



- Color coding via Jenks method with 5 breaks
- Significant differences between states, $F(6,397) = 2.36, p < .05$
- Specifically, Tukey post-hoc tests reveal CO ($M = 4.99$) significantly knowledge/Relevance of evolution than CA ($M = 5.58$)

Discussion

- Significant differences in both Creationist Reasoning and Knowledge/Relevance of Evolution between states.
 - » We hypothesize possibly greater differences as we continue collect data across the U.S.
- Future Research
 - » Continue sampling remaining states via Amazon Mturk & Qualtrics
 - » Use multilevel modeling to examine potential predictors of EALS constructs
 - Individual Level: demographic and personality (e.g., Openness to Experience) variables
 - State level: Science education funding, ratings of state science curriculum, state voting trends, & Google search histories (via Google Trends)
 - » Use ArcGIS to produce depict the U.S. landscape of attitudes toward evolution