

# Does Science Curiosity Relate to Motivated Reasoning about Climate Change?

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CAIDe Seminar

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## Presentation Aims

- ▶ Taking a tour through new correlational data from a pilot study of sorts
- ▶ Questions and feedback welcome throughout!
- ▶ Also I used this as an opportunity to try my hand at making presentations in R, so bear with me in terms of aesthetics :-)

# Agenda

- ▶ Main idea and background information
- ▶ Brief overview of procedure, methods, materials
- ▶ Descriptive statistics

## Science Curiosity & Motivated Reasoning

- ▶ Science curiosity (trait-level) may mitigate selective exposure to partisan-congruent content (Kahan et al., 2017)
- ▶ Consistent with motivated reasoning theory: Curiosity is motivational and could incentivize accuracy (vs. directional) goals (Kunda, 1990)

## Research Question

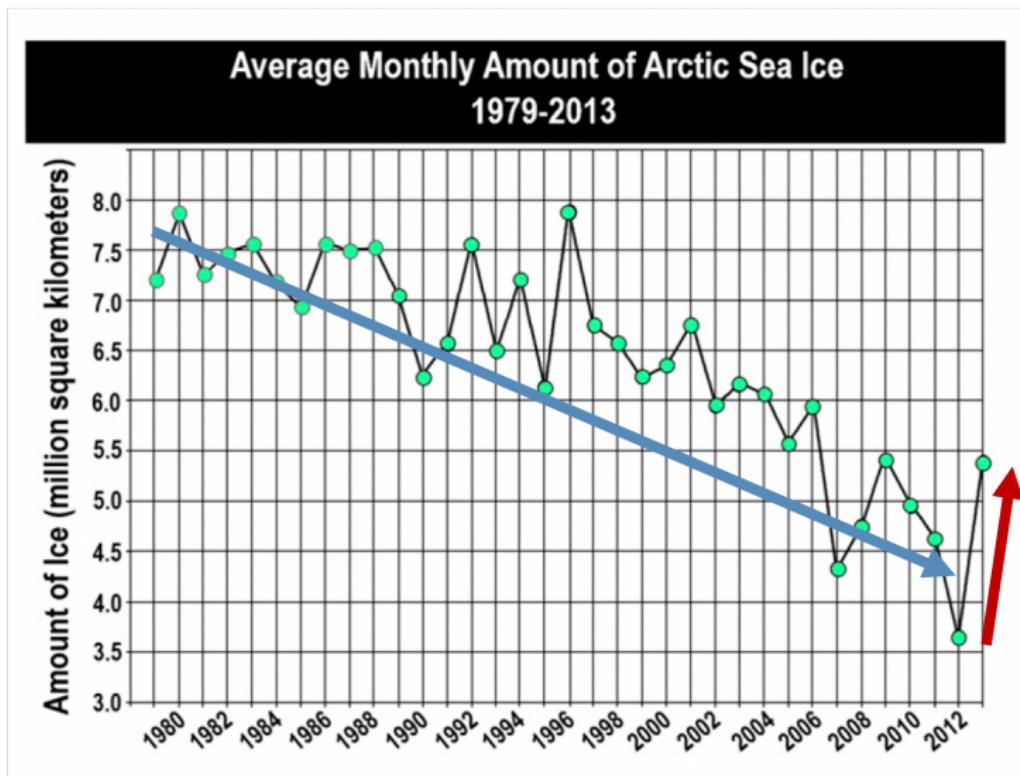
Does science curiosity relate to less motivated *evaluation* of politicized science information?

Examining motivated reasoning through endpoint bias

Guilbeault et al. (2018) & Hardy & Jamieson (2017)

# Endpoint Bias & Motivated Reasoning

Example from Guilbeault et al. (2019)



# Participants

$N_{total} = 541$ :  $N_{con} = 226$ ,  $N_{lib} = 265$ ,  $N_{mod} = 50$

$N_{final} = 491$

- ▶ **Political ideology:** 46.03% conservative, 53.97% liberal
- ▶ **Age:** Mean<sub>age</sub> = 42.94 (range: 19-78)
- ▶ **Gender:** 46.03% women, 52.75% men, 0.41% non-binary folks, 0.81% preferred not to answer
- ▶ **Race:** 82.69% White, 5.91% Black, 2.85% Hispanic, 6.52% Asian

# Procedure

Cohort Baseline: August 16-17, 2021

- ▶ Cognitive ability: Raven's Progressive Matrices (RPM)
- ▶ Political ideology (ANES)
- ▶ Basic demographics

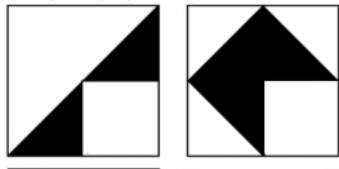
Current Study: July 13-26, 2022

- ▶ Motivated reasoning task (Guilbeault et al., 2018; Hardy & Jamieson, 2017)
- ▶ Science curiosity scale (Kahan et al., 2017)

# Measures: Cognitive Ability

## Raven's Progressive Matrices

What piece (1-6) fits the pattern?



# Measures: Science Curiosity

Adapted from Science Curiosity Scale (Kahan et al., 2017)

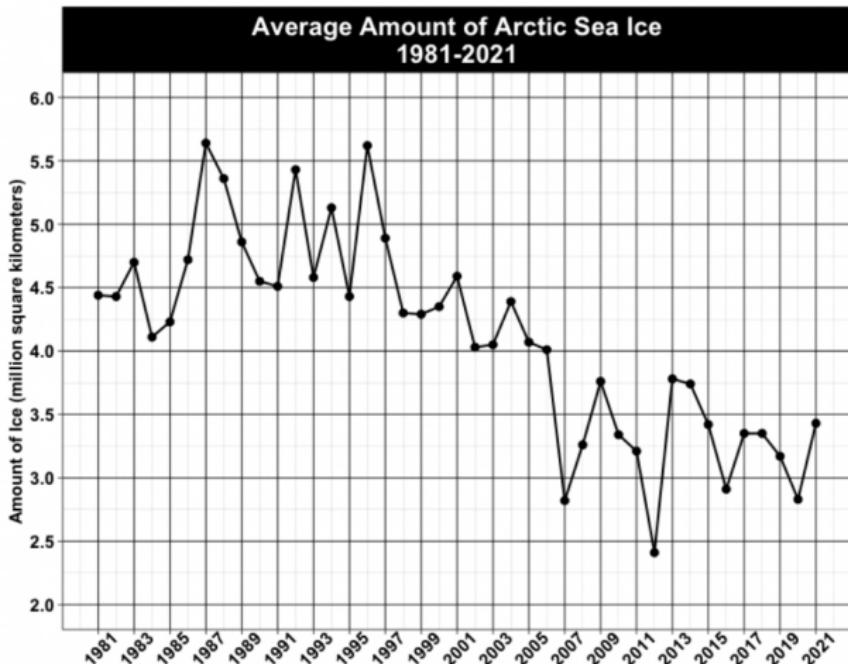
There are a lot of issues in the news and it is hard to keep up with every area. We will list some topics that get covered in the media. Please indicate **how closely you follow the news relating to each topic either in the newspaper, on television, on radio, or on the internet.**

|                                    | Not at all            | A little but not closely | Closely but not very closely | Very closely          |
|------------------------------------|-----------------------|--------------------------|------------------------------|-----------------------|
| Scientific research or discoveries | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Crime                              | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Education                          | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Religion                           | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| New technologies                   | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Government or politics             | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Entertainment or celebrities       | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| International affairs              | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Local weather                      | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Sports                             | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |
| Business or finance                | <input type="radio"/> | <input type="radio"/>    | <input type="radio"/>        | <input type="radio"/> |

# Measures: Motivated Reasoning

Think about 20 years from now...

This graph displays the average amount of sea ice in the Arctic, measured in millions of square kilometers, from 1981 to 2021. Changes in the amount of Arctic sea ice may indicate changes in the Earth's climate.



# Measures: Motivated Reasoning

## Coding Endpoint Bias

Think about **20 years** from now. The extent of Arctic sea ice will be:

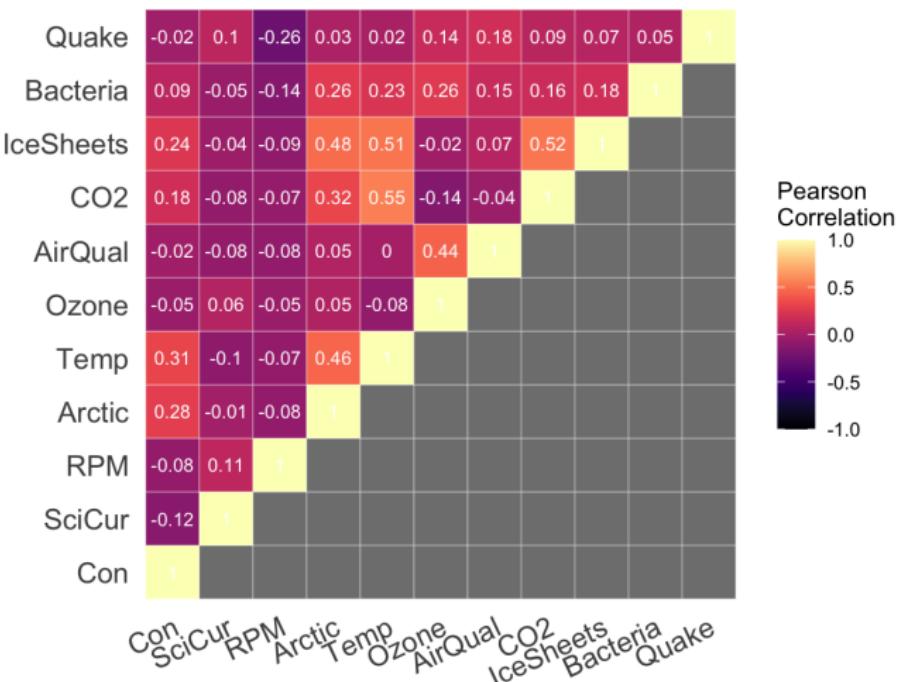


## Basic Descriptives

|               | Min | Max | SD   | Mean  | Median | Skew  |
|---------------|-----|-----|------|-------|--------|-------|
| SciCuriosity  | 9   | 44  | 5.79 | 24.73 | 25     | 0.00  |
| RPM           | 1   | 10  | 1.59 | 5.64  | 6      | -0.12 |
| ArcticIce     | -3  | 3   | 1.32 | -1.43 | -2     | 1.14  |
| GlobalTemp    | -3  | 3   | 1.14 | -1.69 | -2     | 1.28  |
| OzoneHole     | -3  | 3   | 1.41 | -0.26 | -1     | 0.45  |
| AirQuality    | -3  | 3   | 1.59 | -0.82 | -1     | 0.79  |
| IceSheets     | -3  | 3   | 1.19 | -2.10 | -2     | 1.93  |
| BacteriaPop   | -3  | 3   | 1.25 | -0.27 | 0      | 0.21  |
| EarthquakeMag | 0   | 1   | 0.46 | 0.31  | 0      | 0.82  |

# Basic Descriptives

## Correlations

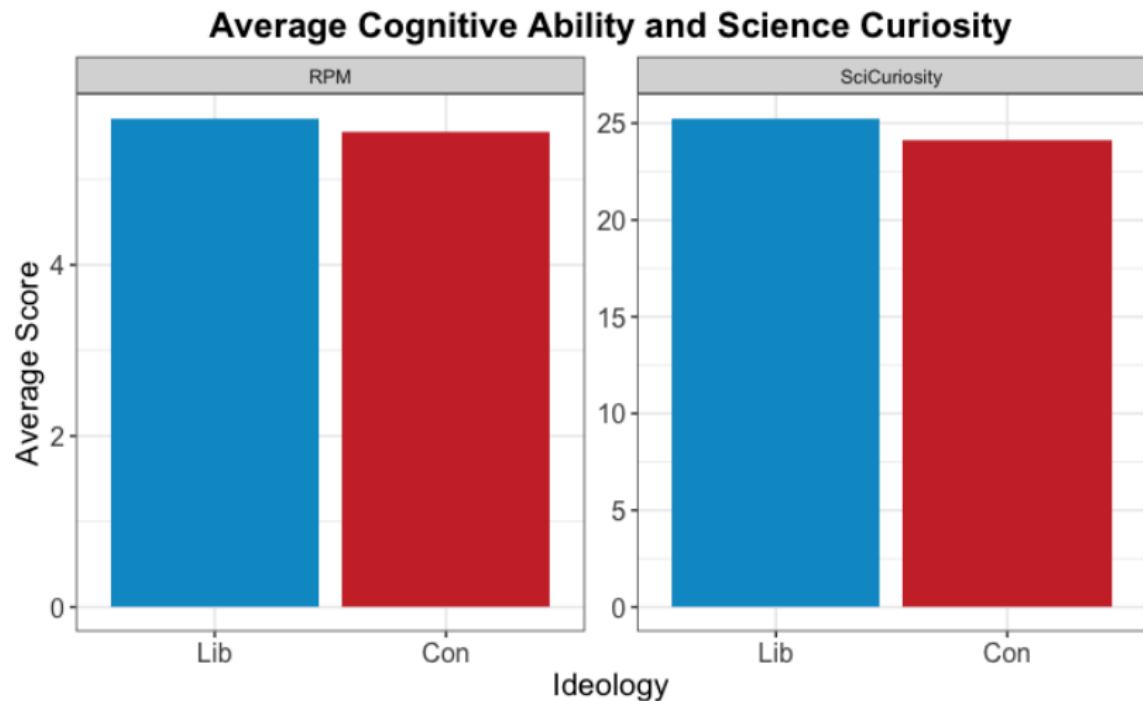


Conservatism ("Con"): "Extremely liberal" (1) to "Extremely conservative" (7)

## Descriptives by Ideology

|              | Conservative |      |        | Liberal |      |        |
|--------------|--------------|------|--------|---------|------|--------|
|              | M_c          | SD_c | Skew_c | M_I     | SD_I | Skew_I |
| SciCuriosity | 24.12        | 5.79 | 0.12   | 25.25   | 5.75 | -0.10  |
| RPM          | 5.55         | 1.53 | -0.20  | 5.71    | 1.63 | -0.07  |
| ArcticIce    | -1.07        | 1.36 | 0.80   | -1.73   | 1.20 | 1.57   |
| GlobalTemp   | -1.37        | 1.25 | 1.06   | -1.97   | 0.94 | 1.34   |
| OzoneHole    | -0.32        | 1.40 | 0.42   | -0.21   | 1.42 | 0.47   |
| AirQuality   | -0.85        | 1.55 | 0.72   | -0.81   | 1.62 | 0.83   |
| IceSheets    | -1.83        | 1.30 | 1.49   | -2.33   | 1.02 | 2.51   |
| Bacteria     | -0.16        | 1.23 | 0.21   | -0.35   | 1.26 | 0.22   |
| Earthquakes  | 0.29         | 0.45 | 0.93   | 0.33    | 0.47 | 0.73   |

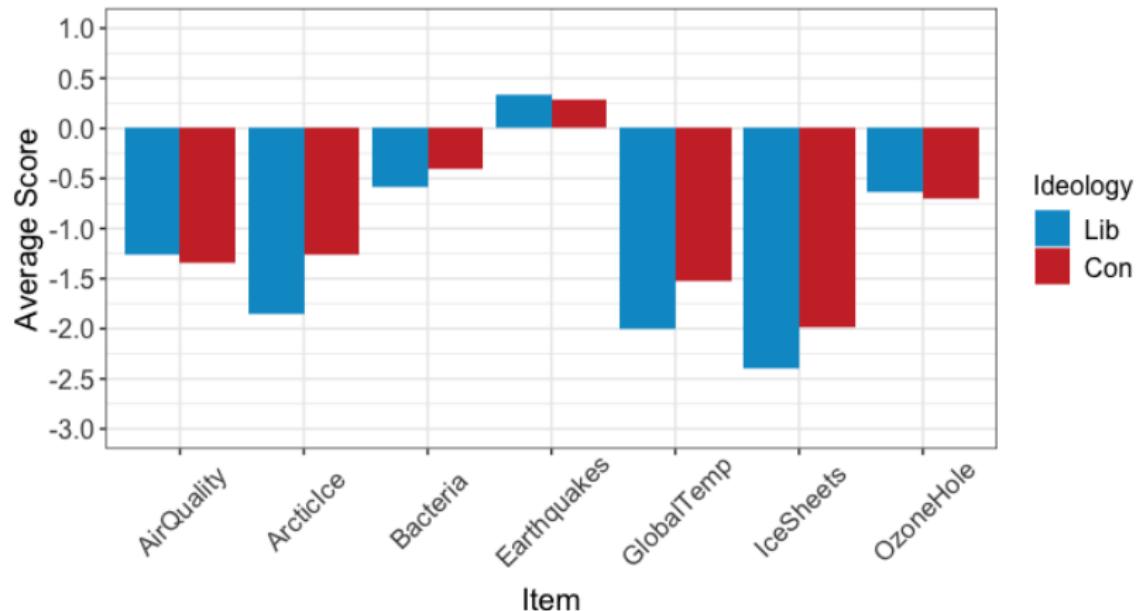
# Descriptives by Ideology



# Endpoint Bias by Ideology

## Average Scores on Motivated Reasoning Items

Higher scores indicate more endpoint bias.



# Conclusion

- ▶ These are still very preliminary “findings”
- ▶ Still need to dig into inferential analyses (i.e., MLM)

Thank you!

Questions, comments, or concerns?

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