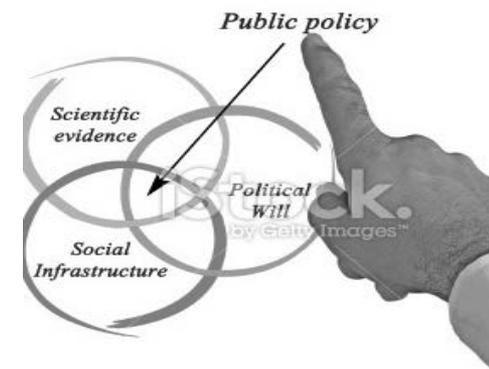
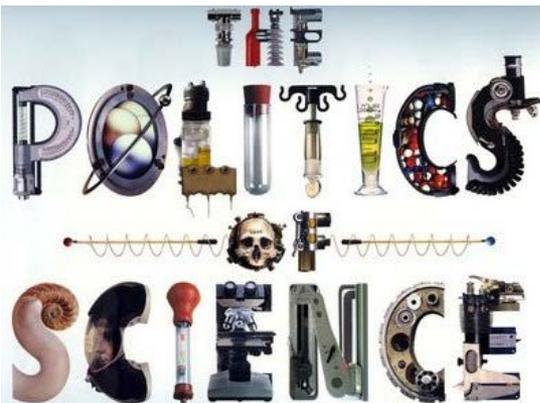


Do Partisanship and Politicization Undermine the Impact of Scientific Consensus on Climate Change Beliefs?

By

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Citizens' Climate Change Beliefs

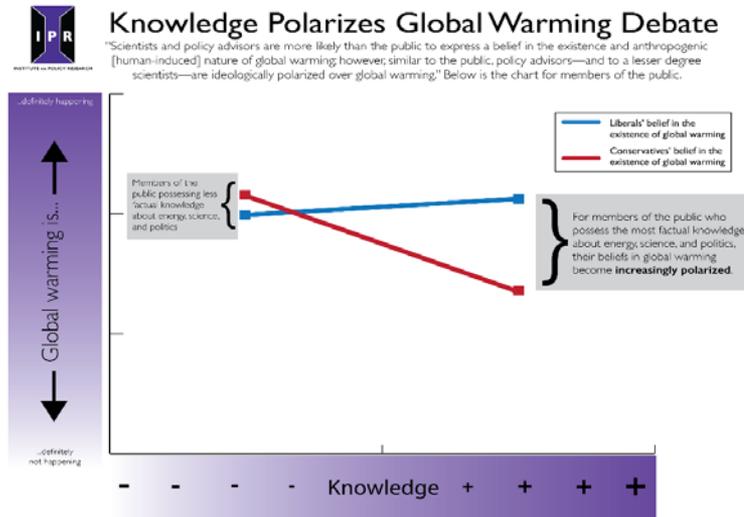
- How does the American public arrive at its beliefs about human-induced climate change?
- Do these beliefs influence its opposition or support for climate mitigation policies (i.e., policies aimed at counteracting the effects of climate change – related to geoengineering on a small scale)?

Citizens' Climate Change Beliefs

- Information sources →
 1. Personal Experience (e.g., local climate).
 2. Indirect information from two groups:
 - A. **Scientists** → nearly universally agree (i.e., there is a consensus) that human activity is a primary cause of climate change (e.g., International Panel on Climate Change, 2013).
 - B. **Political Party (elites)** → divided with Democrats largely accepting the scientific consensus that human activity is a primary cause of climate change, while many Republicans remain skeptical (Bolsen et al. 2015; Lavelle, 2017).

Citizens' Climate Change Beliefs

- Evidence that that the American public follows *party elites (rather than scientists)*.
- **Especially knowledgeable citizens:** as partisan citizens gain information, they polarize with Democrats strongly believing in human-induced climate change and Republicans not (e.g., Bolsen et al. 2014, Kahan 2015).



Source: "Citizens', Scientists', and Policy Advisors' Beliefs about Global Warming" by Toby Bohan, James Druckman, and Fay Lomax Cook (WP-14-17)

Questions

- Can the statement of a scientific consensus have an effect? **If so, among whom?**
→ **Which partisan subgroups (e.g., Republicans)?**
 - Mixed evidence to date on the impact of scientific consensus statements (c.f., Kahan, van der Linden et al.).
 - “The results of studies that examine the impact of ‘consensus messaging’ [on climate change] are mixed” (Kahan 2016: 2-3).

Questions

- Does politicizing the science – by which we mean introducing its inherent uncertainty and political application – nullify the effect of communicating scientific consensus?
- If so, are there ways to combat this (e.g., a warning)?

Outline

- Experimental Design and Procedure.
 - Subjects receive one of several possible communications about scientific views of human-induced climate change.
 - Outcomes: belief human activity is the primary cause of climate change, support for climate mitigation policies.
- Results by Partisan Subgroups.
- Conclusion

Experimental Design and Procedure

- Survey Experiment →
 - Representative U.S. sample in July, 2014; (N = 924) (excluding pure Independents).
 - Measured demographics including partisanship and political/energy knowledge (with 11 factual questions).

Experimental Design and Procedure

- Random assignment to one of five experimental conditions to address questions:
 - Control (i.e., introduction about climate change and then outcome measures)
 - Receipt of scientific **consensus** statement.
 - **Politicization** claim + scientific consensus statement.
 - **Warning** not politicized (inoculation) + politicization claim + scientific consensus statement.
 - Politicization claim + scientific consensus statement + **correction** not politicized.

Outcome Measures (Presented Here)

1. Extent **believe** climate change is primarily due to human activity as opposed to Earth's natural changes.
2. **Policy Beliefs** (scaled with $\alpha = .91$).
 - Decrease or increase investment in ways to reduce impacts of climate change.
 - Importance of planning for ways to reduce climate change.
 - Opposition or support for laws to cut emissions of greenhouse gases.

Consensus Statement

- “A recent report, *Climate Change Impacts in the United States*, produced by 300 expert scientists and reviewed by the National Academy of Sciences as well as agencies with representatives from oil companies, puts much of the uncertainty to rest by stating that climate change “is primarily due to human activities.””
- Outcome measures.

Expectation

- **Motivated Reasoning** → partisans who hold prior views in-line with their party (i.e., Republicans who already believe less) counter-argue information to protect their prior views/identity.
- Motivated reasoning **INCREASES** with knowledge as people are more likely to “know” partisan positions and are more motivated to counter-argue.
- Thus, high knowledge Republicans may not be moved by the consensus statement. All others will be.

Politicization Statement

- **Politicization** → “when an actor emphasizes the inherent uncertainty of science to cast doubt on a consensus, often in pursuit of a political agenda” (e.g. Freudenburg et al. 2008, Stekette 2010: 2).
- “... Politics nearly always color scientific work with advocates selectively using evidence (e.g., that supports their policy positions). This leads some to say there is too much uncertainty over the role that humans play in this process....”
- Outcome measures.

Expectation

- **Reject consensus** → politicization generates uncertainty and this leads people to stick with the status quo/not move beliefs (e.g., Korobkin 2000: 118).
- Evidence on nuclear energy, and energy technologies (Bolsen et al. 2014, Bolsen and Druckman 2015).

Warning or Correction About Politicization

- Can **warning** people in advance of politicization statement inoculate them from it (they dismiss it) or “**correcting**” it afterward by stating it is untrue?
- BEFORE politicization statement (**warning**) or AFTER (**correction**) →

“Some say ... people only point to evidence that supports their positions (e.g., their policy positions). Yet, despite what some claim, there is virtually no uncertainty when it comes to the assessment of *human-induced* climate change...”

- Outcome measures.

Expectation

- Resuscitate the Scientific Consensus By Counter-Acting Politicization (Bolsen and Druckman 2015, van der Linden et al. 2017).

Summary

- **Five Experimental Conditions** → (1) control; (2) consensus information only; (3) politicization claim + consensus information; (4) warning + politicization claim + consensus information; and, (5) politicization claim + consensus information + correction.
- All groups then answered → belief in human-induced climate change and policy belief items.

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- **Expect** →
 - High Knowledge Republicans resist impact of the consensus message.
 - Politicization eliminates effect of the consensus message.
 - Warning/correction restore effect of consensus message.

Analyses

- Given partisan subgroup expectations, present results:
 - By **FOUR** groups:
 - **Party Identification:** Democrat or Republican.
 - **Knowledge:** median split on objective 11 fact questions (also looked at distinct flips, etc..)
 - Thus: → low knowledge Democrats (213), low knowledge Republicans (173), high knowledge Democrats (286), high knowledge Republicans (264).
- Regressions with experimental dummy variables, relative to the control group (** $p \leq .01$; ** $p \leq .05$; * $p \leq .10$ for two-tailed tests).

Low Knowledge Democrats

| | Human-Induced Climate Change | Policy Beliefs | Policy Beliefs |
|----------------|------------------------------|----------------------|-----------------------|
| Consensus | 0.474** (0.238) | 0.0125 (0.0422) | -0.0127 (0.0397) |
| Politicization | -0.151 (0.233) | 0.0181 (0.0412) | 0.0322 (0.0386) |
| Warning | -0.215 (0.240) | 0.0188 (0.0428) | 0.0363 (0.0401) |
| Correction | -0.197 (0.233) | 0.00804 (0.0415) | 0.0259 (0.0389) |
| Human-Induc. | | | 0.0630*** (0.0114) |
| Constant | 4.651*** (0.166) | 0.718*** (0.0298) | 0.420*** (0.0608) |
| Observations | 210 | 205 | 205 |
| R-squared | 0.052 | 0.001 | 0.133 |

- The consensus message → ↑ belief in human-induced, ≠ policy beliefs, BUT indirectly influences policy beliefs.
- Politicization → ELIMINATED the effect.
- Warnings and Corrections → FAILED to restore the consensus effect.

Low Knowledge Republicans

| | Human-Induced Climate Change | Policy Beliefs | Policy Beliefs |
|----------------|------------------------------|----------------------|-----------------------|
| Consensus | 0.517* (0.289) | 0.0288 (0.0555) | -0.0154 (0.0518) |
| Politicization | -0.381 (0.273) | 0.118** (0.0528) | 0.140*** (0.0488) |
| Warning | -0.350 (0.280) | -0.0536 (0.0538) | -0.0321 (0.0497) |
| Correction | -0.299 (0.284) | -0.0147 (0.0550) | 0.000812 (0.0508) |
| Human-Induc. | | | 0.0757*** (0.0143) |
| Constant | 4.138*** (0.204) | 0.554*** (0.0396) | 0.245*** (0.0687) |
| Observations | 159 | 156 | 156 |
| R-squared | 0.086 | 0.079 | 0.224 |

- The consensus message → ↑ belief in human-induced, ≠ policy beliefs, BUT indirectly influenced policy beliefs.
- Politicization → ALMOST ELIMINATED all effects (odd effect on policy belief).
- Warnings and Corrections → FAILED to restore the consensus effect.

High Knowledge Democrats

| | Human-Induced Climate Change | Policy Beliefs | Policy Beliefs |
|----------------|------------------------------|----------------------|------------------------|
| Consensus | 0.349** (0.178) | 0.0230 (0.0293) | 0.00459 (0.0280) |
| Politicization | 0.481*** (0.188) | 0.0351 (0.0311) | 0.00948 (0.0298) |
| Warning | 0.402** (0.177) | 0.00161 (0.0292) | -0.0206 (0.0279) |
| Correction | 0.208 (0.182) | -0.0231 (0.0301) | -0.0328 (0.0286) |
| Human-Induc. | | | 0.0536*** (0.00934) |
| Constant | 5.356*** (0.127) | 0.840*** (0.0208) | 0.553*** (0.0538) |
| Observations | 286 | 282 | 282 |
| R-squared | 0.030 | 0.015 | 0.120 |

- The consensus message → ↑ belief in human-induced, ≠ policy beliefs, BUT indirectly influenced policy beliefs.
- Politicization → Does NOT eliminate effects (e.g., counter-argument!)
- Warnings and Corrections → Nothing to correct *per se* but correction short of significance.

High Knowledge Republicans

| | Human-Induced Climate Change | Policy Beliefs | Policy Beliefs |
|----------------|------------------------------|----------------------|----------------------|
| Consensus | -0.347 (0.261) | 0.0195 (0.0589) | 0.0620 (0.0483) |
| Politicization | -0.315 (0.249) | 0.0179 (0.0557) | 0.0585 (0.0457) |
| Warning | -0.151 (0.256) | -0.0157 (0.0575) | 0.00372 (0.0470) |
| Correction | -0.400 (0.279) | 0.0140 (0.0635) | 0.0628 (0.0521) |
| Human-Induc. | | | 0.129*** (0.0115) |
| Constant | 3.800*** (0.192) | 0.473*** (0.0429) | -0.0168 (0.0560) |
| Observations | 261 | 257 | 257 |
| R-squared | 0.012 | 0.002 | 0.335 |

- **The consensus message** → **NON-EFFECTS** (belief in human induced affects policy beliefs but not due to consensus message).
- **Politicization** → **NON-EFFECTS**.
- **Warnings and Corrections** → **NON-EFFECTS**.

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- High knowledge Republicans reject the consensus statement's direct application to human-induced climate change beliefs thereby undermining (or at least vitiating) its indirect impact on policy support.

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- High knowledge Republicans reject the consensus statement's direct application to human-induced climate change beliefs thereby undermining (or at least vitiating) its indirect impact on policy support.
- With the exception of high knowledge Democrats, **politicizing science largely eliminates the impact of the consensus statement** on beliefs about human-induced climate change and then ultimately policy support.
- Efforts to counteract politicized statements fail.

Next Steps

- The impact of other politicization messages (e.g., with partisan sources).
- Other ways to counter-act politicization (e.g., van der Linden et al. 2017).
- Ways to message resistant partisan subgroups – appeal to their values and recognize belief ≠ policies (e.g., Campbell and Kay 2014).

Thank You