



COMMUNICATING CLIMATE CHANGE

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ENVIRONMENT MANAGEMENT COUNCIL

NOVEMBER 10, 2016

The Challenge of Climate Change Communication

- Why in the face of scientific evidence do some people continue to deny its existence and refute policy action?



Distant consequences

Weather

Climategate

Social influences

Fatalism

Climate literacy

Poor communication Costs of solving

Media coverage

Fossil fuels lobby

Worldview

futility

Politics

Uncertainty

Risk perceptions

Values

Sources

Controversy

PRIOR KNOWLEDGE

Or, To Summarize...

- Characteristics of the
 - Audience
 - Message
 - Source
 - Channel
- Social, cultural, economic, and political context
- Nature of the risk...

...influence responses to climate change communication.

Highlights of Today's Talk

- Overview of U.S. public opinion
 - Most Americans agree that climate change is occurring; however, a “divide” exists.
- Some reasons for the “divide”
 - Individual factors, e.g., motivated reasoning, selective exposure
 - Social factors, e.g., media
- Path forward
 - Reframing the issue?



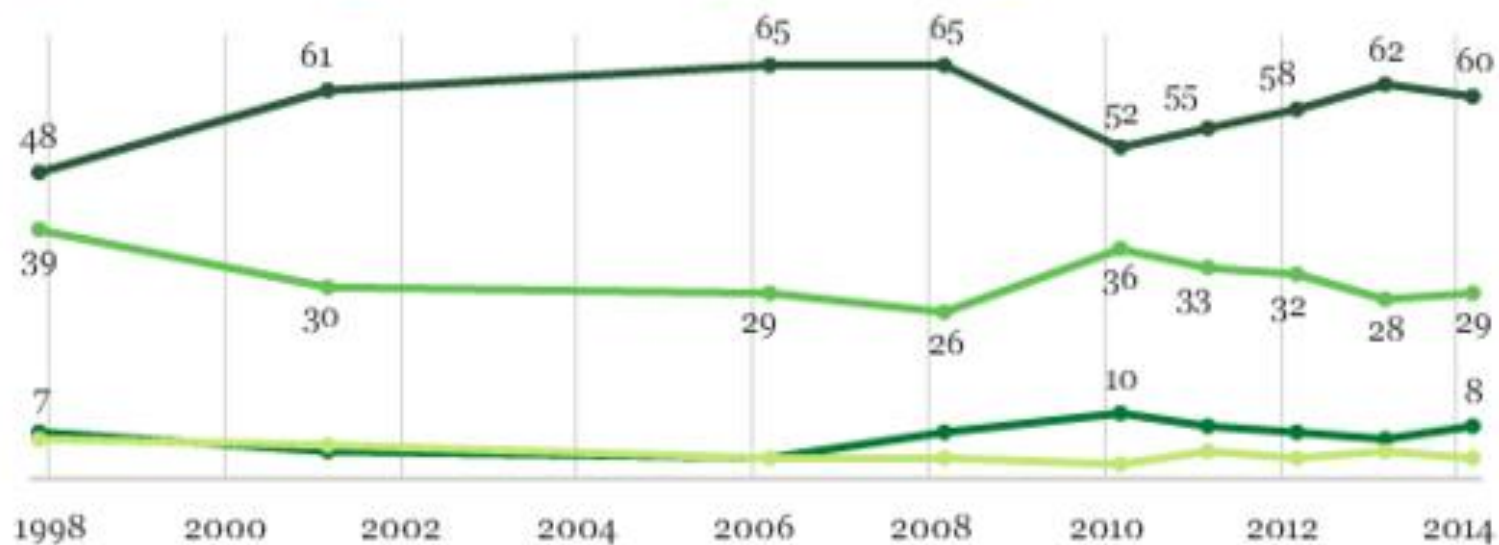
First, the Data...

U.S. Public Opinion

Americans' Views on Whether Scientists Believe Global Warming Is Happening

Just your impression, which one of the following statements do you think is most accurate -- most scientists believe that global warming is occurring, most scientists believe that global warming is NOT occurring, or most scientists are unsure about whether global warming is occurring or not?

■ % Is occurring ■ % Not occurring ■ % Unsure ■ % No opinion



GALLUP®

<http://www.gallup.com/poll/167960/americans-likely-say-global-warming-exaggerated.aspx?version=print>

Biggest hurdle for climate change action? Partisan divide.

A new poll suggests that Americans' polarized views on climate change could be one of the biggest stumbling blocks toward progress.

By **Husna Haq**, Correspondent | DECEMBER 4, 2015

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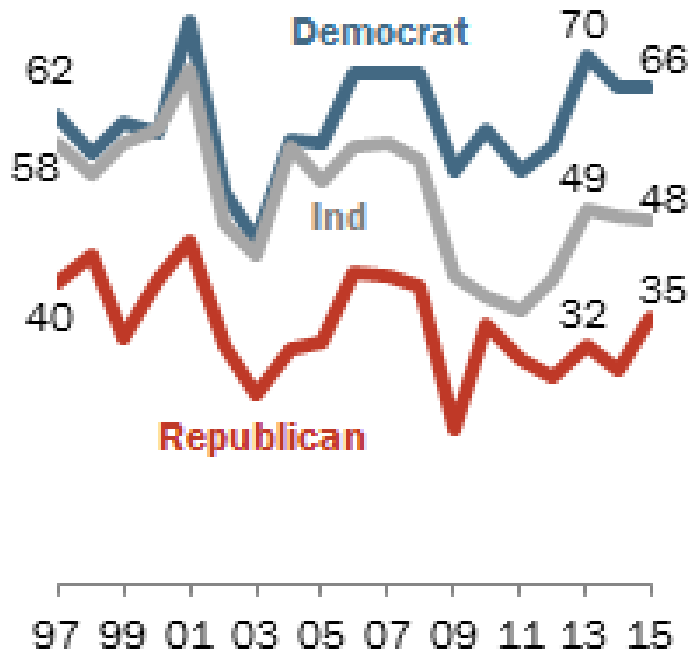
...And Now the Divide

U.S. Public Opinion by
Political Party and Ideology

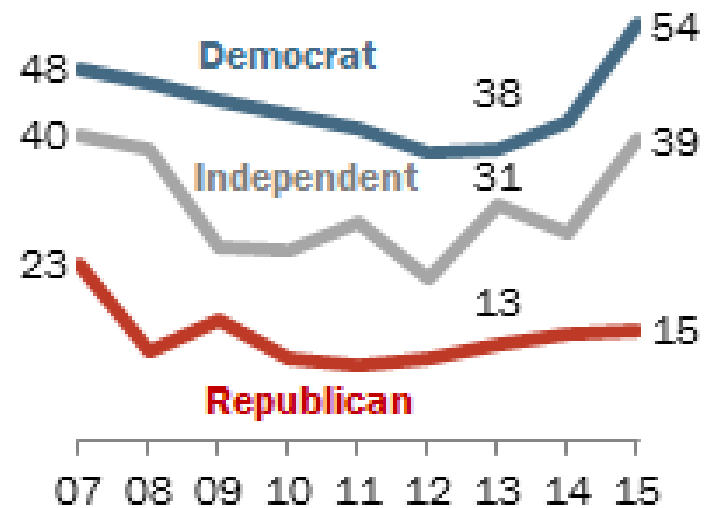
Partisan Gaps on Environment and Global Warming

% saying _____ is a top priority

Protecting the environment



Dealing with global warming



Survey conducted Jan. 7-11, 2015.

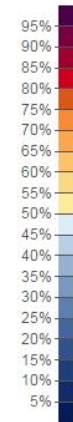
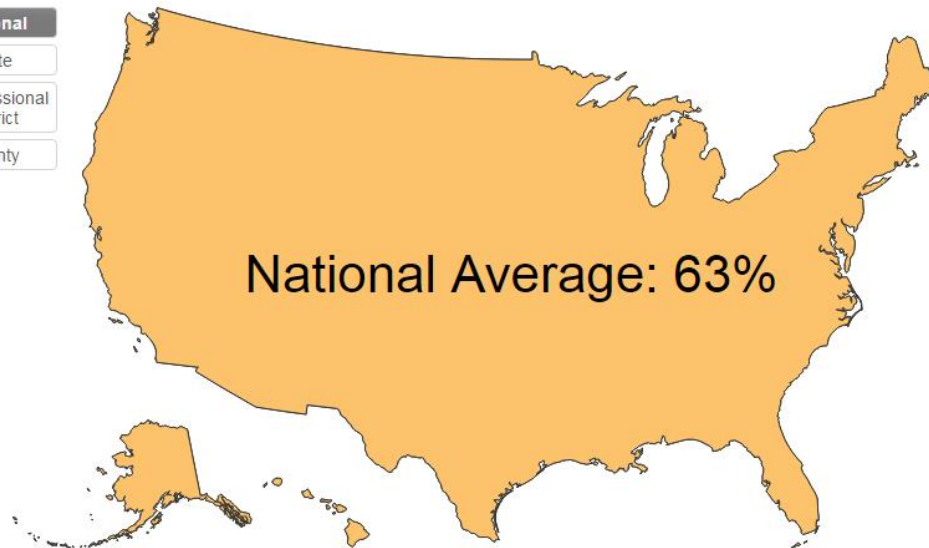
PEW RESEARCH CENTER



Estimated % of adults who think global warming is happening, 2014

Display model output:

- National**
- State
- Congressional District
- County



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United States

50%

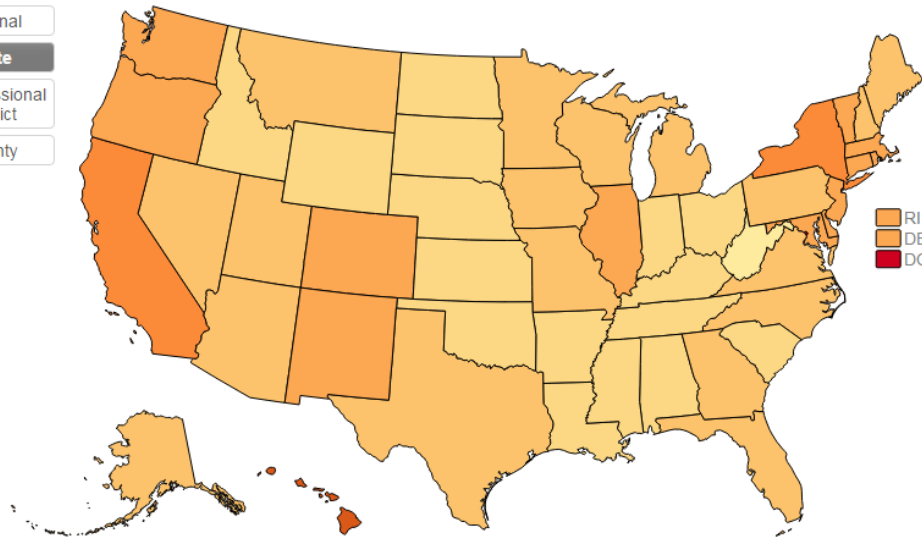




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United States

50%

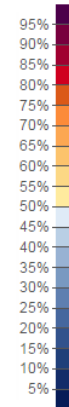
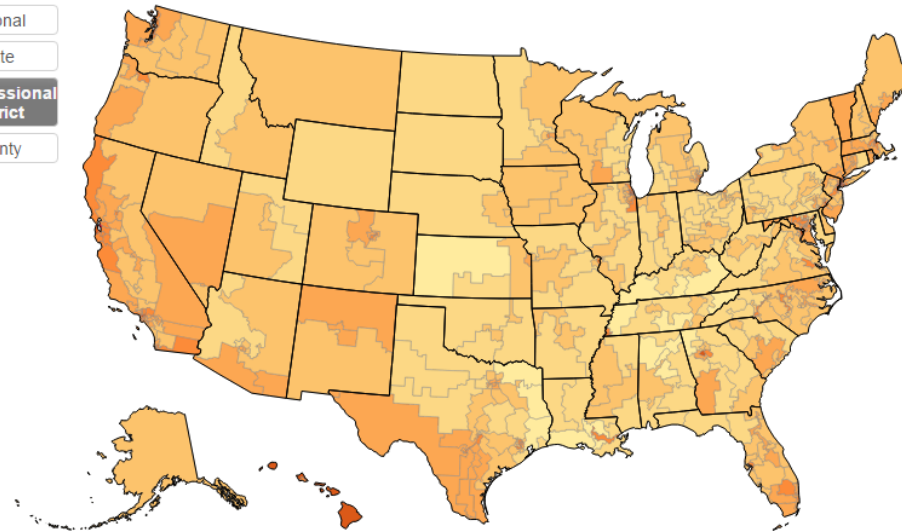




Estimated % of adults who think global warming is happening, 2014

Display model output:

- National
- State
- Congressional District**
- County



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United States

50%

Yes

63%

18%

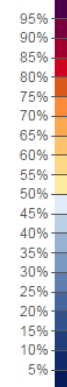
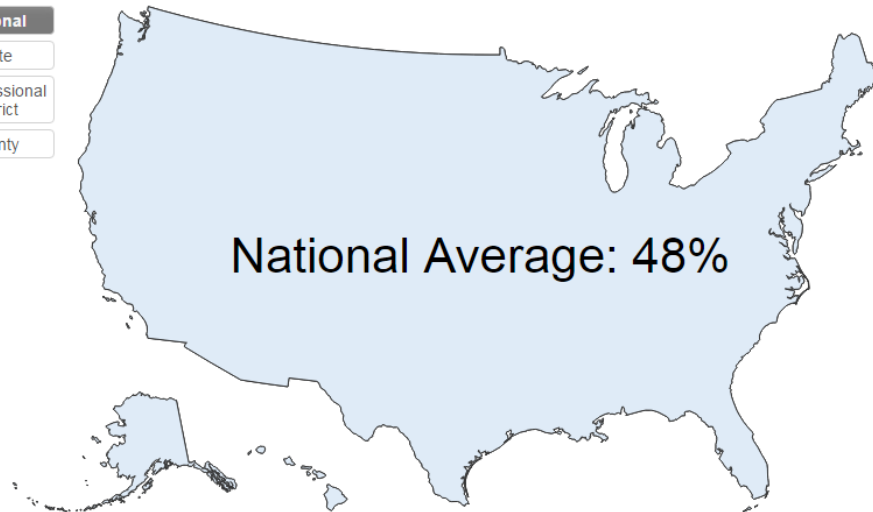
No



Estimated % of adults who think global warming is mostly caused by human activities, 2014

Display model output:

- National**
- State
- Congressional District
- County



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United States

50%

Human activities

48%

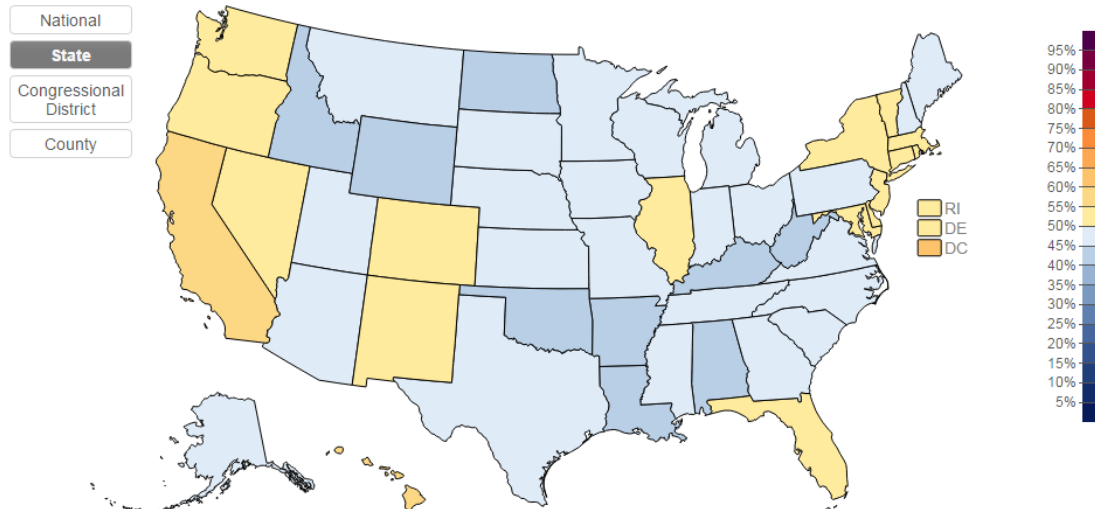
35%

Natural changes



Estimated % of adults who think global warming is mostly caused by human activities, 2014

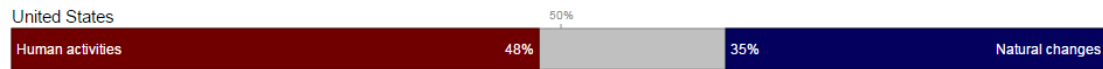
Display model output:



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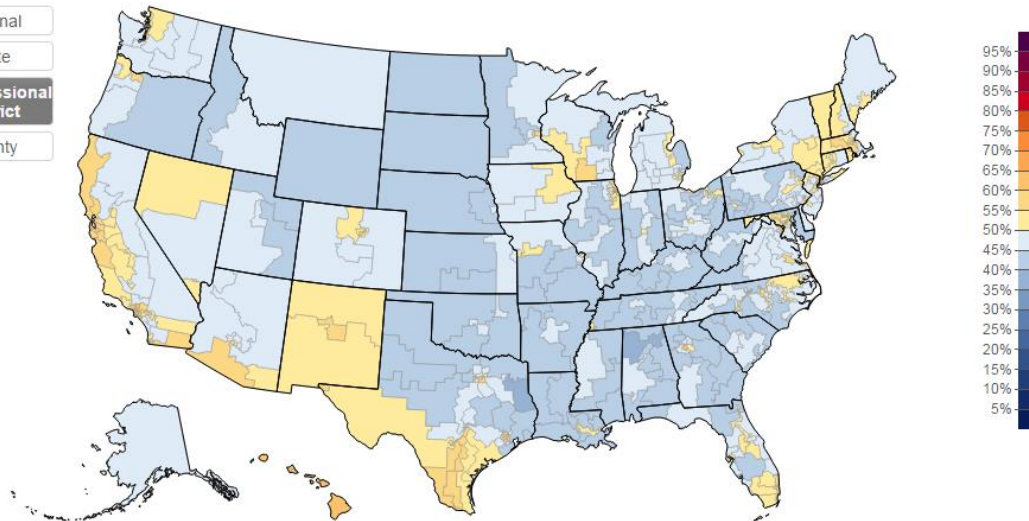




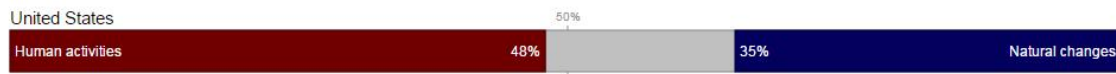
Estimated % of adults who think global warming is mostly caused by human activities, 2014

Display model output: Global warming is caused mostly by human activities

- National
- State
- Congressional District**
- County



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What Contributes to the Divide?

Individual Factors

“Motivated Reasoning”

The Science of Why We Don't Believe Science

How our brains fool us on climate, creationism, and the vaccine-autism link.

—By [Chris Mooney](#) | May/June 2011 Issue

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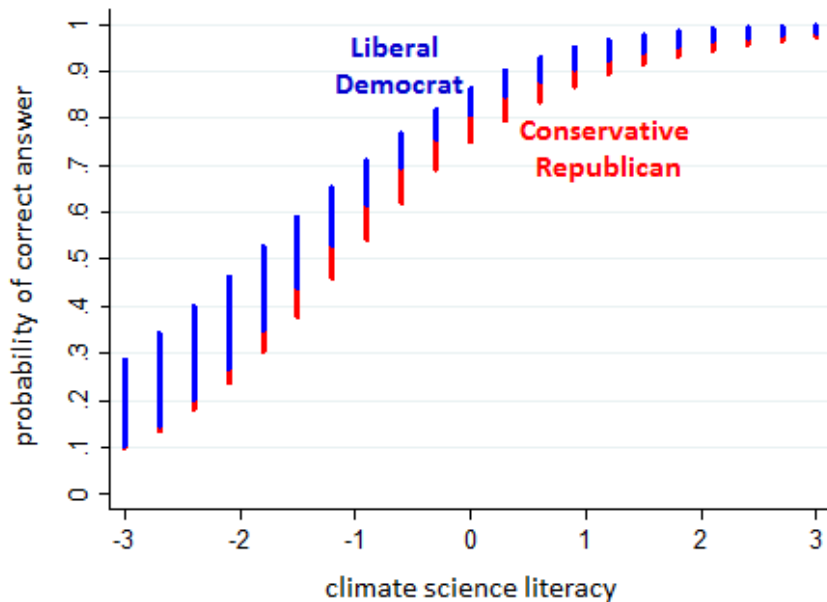
Illustration: Jonathon Rosen

"A MAN WITH A CONVICTION is a hard man to change. Tell him you disagree and he turns away. Show him facts or figures and he questions your sources. Appeal to logic and he fails to see your point." So wrote the celebrated Stanford University psychologist [Leon Festinger](#) (PDF), in a passage that might have been referring to climate change denial—the persistent rejection, on the part of so many Americans today. of

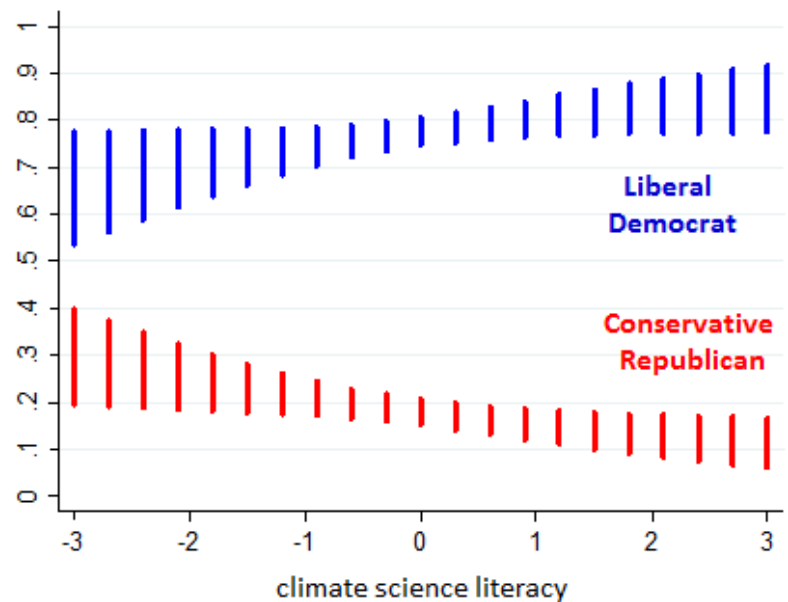
- People interpret and process incoming information in a way that reinforces their predispositions (Kunda, 1990; Taber & Lodge, 2006).
- For climate change information, political ideology is an important motivator (Hart & Nisbet, 2012; Lu & Schuldt, 2016; Wiest, Raymond, & Clawson, 2015).

“Climate science literacy”: item response theory

“What gas do most scientists believe causes temperatures in the atmosphere to rise? Is it [hydrogen, helium, carbon dioxide, radon]?”



“[Is the earth] getting warmer (a) mostly because of human activity such as burning fossil fuels or (b) mostly because of natural patterns in the earth’s environment?”



Annenberg Center for Public Policy & Cultural Cognition Project. $N = 1,769$. Predicted probabilities derived via Monte Carlo Simulation based on logistic regression. Nationally representative sample, April/May 2014 (YouGov). Political outlook predictor set at -1 SD & +1 SD on "Left_right" scale for "liberal democrat" and "conservative Republican," respectively. Colored bars reflect 0.95 confidence intervals.

Why does motivated reasoning happen?

- Basic human survival skill:
 - “we push threatening information away; we pull friendly information close”
<http://www.motherjones.com/politics/2011/03/denial-science-chris-mooney>
- Confirmation and disconfirmation biases:
 - We give greater weight to information that confirms our beliefs and extend more energy to refute information that disagrees with our beliefs.
- Deep seated or moral values:
 - Our core beliefs about the way society should be ordered

Why Does It Matter?

- Understanding how people respond to climate change communication may help communicators predict their concern and better frame their messages.



Path Forward

Reframing the Issue

Reported Existence Belief	Overall		Republicans		Democrats	
	GW	CC	GW	CC	GW	CC
1 = Definitely has not been happening	6.6%	3.9%	12.7%	5.1%	1.9%	1.3%
2 = Probably has not been happening	8.4%	6.8%	18.2%	14.3%	2.6%	1.0%
3 = Leaning has not been happening	8.2%	7.6%	14.1%	11.4%	2.9%	5.2%
4 = Unsure	9.0%	7.6%	11.0%	8.9%	5.7%	6.0%
5 = Leaning has been happening	13.9%	15.7%	14.1%	17.0%	12.1%	13.6%
6 = Probably has been happening	25.6%	27.8%	20.2%	28.9%	29.2%	27.0%
7 = Definitely has been happening	28.2%	30.5%	9.7%	14.3%	45.6%	45.8%
% High Belief (≥ 5)	67.7%	74.0%	44.0%	60.2%	86.9%	86.4%
Mean Belief	5.05	5.30	3.95	4.62	5.94	5.94
N	1162	1099	362	370	421	382

Schuldt, J. P., Konrath, S. H., & Schwarz, N. (2011). "Global warming" or "climate change"? Whether the planet is warming depends on question wording. *Public Opinion Quarterly*

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Public Health Frame



[Climatic Change](#)

August 2012, Volume 113, [Issue 3](#), pp 1105-1112

Open Access
Letter

A public health frame arouses hopeful emotions about climate change

A Letter

Teresa A. Myers, Matthew C. Nisbet, Edward W. Maibach, Anthony A. Leiserowitz

First online: 28 June 2012

Marine Policy 57 (2015) 45–52



ELSEVIER

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Communicating about marine disease: The effects of message frames on policy support

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ARTICLE INFO

Article history:
Received 23 August 2014
Received in revised form 23 February 2015
Accepted 24 February 2015

Keywords:
Risk communication
Oysters
Climate change communication
Message framing
Risk perception

ABSTRACT

Oceans are suffering from the dual climatic pressures of warming temperatures and increasing the presence of disease risks that affect marine organisms and public health. To maximize the salience of these issues, we conducted a randomized field-based experiment, this study examines the effects of communication message frames on people's support for policies aimed at mitigating the function of different message frames. To maximize the salience of these issues, we recruited from ferry passengers ($N=543$) in the San Juan Islands of Washington State and randomized to read one of four fictitious news articles detailing the risk of deadly bacteria (*Vibrio*) in oysters in the Pacific Northwest. Depending on the attributed causes to global warming or climate change and the consequence to health or public health—frames that recent research suggests can influence how environmental messages are received. Results showed high levels of support for marine policy about the prevalence of marine disease risks across the sample (i.e., irrespective of individual differences). Analysis of individual differences suggested that participants with lower biocentric values were more supportive of marine policy when exposed to the article highlighting

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Review

Cite this article: Schuldt JP, McComas KA, Byrne SE. 2016 Communicating about ocean health: theoretical and practical considerations. *Phil. Trans. R. Soc. B* **371**: 20150214. <http://dx.doi.org/10.1098/rstb.2015.0214>

Accepted: 14 December 2015

One contribution of 14 to a theme issue 'Marine disease'.

Subject Areas:
environmental science



Joe Satran Become a fan
joe.satran@huffingtonpost.com



Vibriosis, Deadly Disease Associated With Raw Oysters, May Get More Common As Ocean Warms

Posted: 02/07/2013 10:31 am EST | Updated: 02/07/2013 1:32 pm EST



Communicating about ocean health: theoretical and practical considerations

Jonathon P. Schuldt, Katherine A. McComas and Sahara E. Byrne

Department of Communication, Cornell University, Mann Library Building, Ithaca, NY 14853, USA

JPS, 0000-0002-0885-0160

As anthropogenic stressors threaten the health of marine ecosystems, there is a need to better understand how the public processes and responds to information about ocean health. Recent studies of public perceptions about ocean issues report high concern but limited knowledge, prompting calls for information campaigns to mobilize public support for ocean restoration policy. Drawing on the literature from communication, psychology and related social science disciplines, we consider a set of social-cognitive challenges that researchers and advocates are likely to encounter when communicating with the public about ocean health and emerging marine diseases—namely, the *psychological distance* at which ocean issues are construed, the *unfamiliarity* of aquatic systems to many members of the public and the potential for marine health issues to be interpreted through *politicized* schemas that encourage motivated reasoning over the dispassionate consideration of scientific evidence. We offer theory-based strategies to help public outreach efforts address these challenges and present data from a recent experiment exploring the role of message framing (emphasizing the public health or

What should messages include?

- What actions can people take to reduce or control their exposure to a risk
 - Promote sense of agency or efficacy
 - Reduce sense of futility
 - Promote positive outcomes

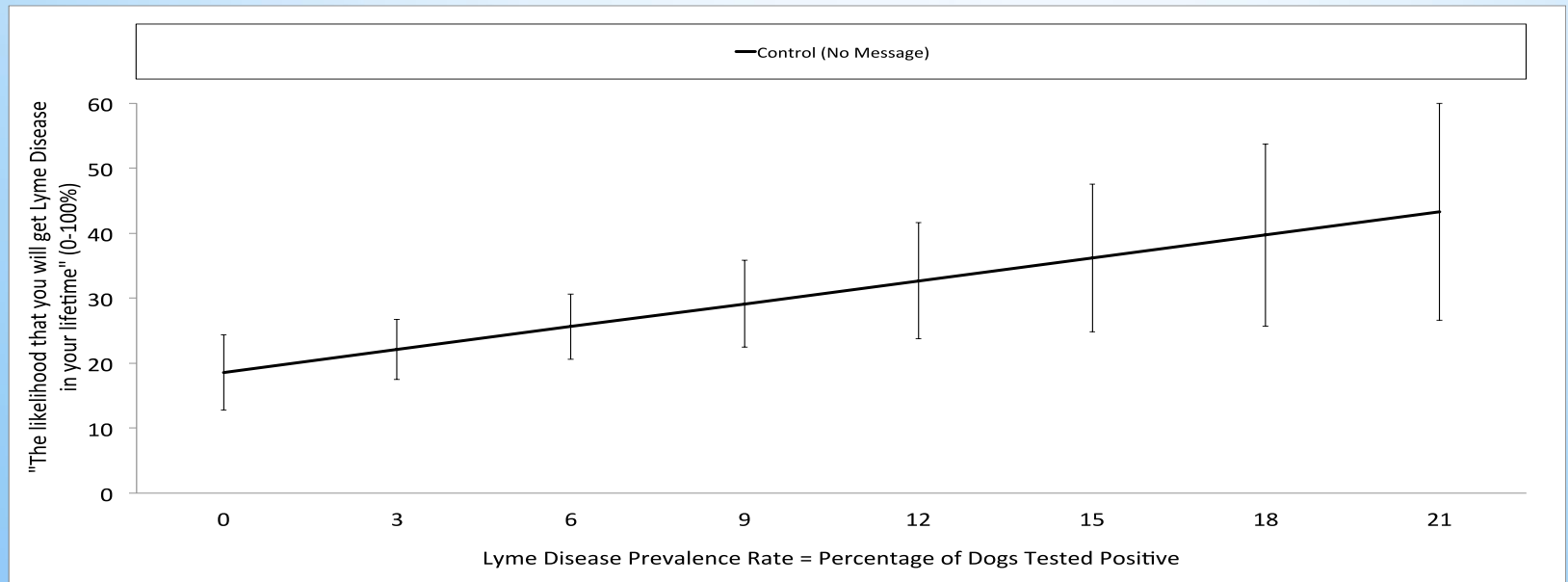
Audience Interest – Don't take it for granted

- *Not everyone will pay attention.*
- People are more likely to listen and seek information when they...
 - Recognize that there is a problem
 - Feel some connection to the problem
 - Believe they can do something to solve the problem
 - Believe that people important to them would want them to know about the risk issue

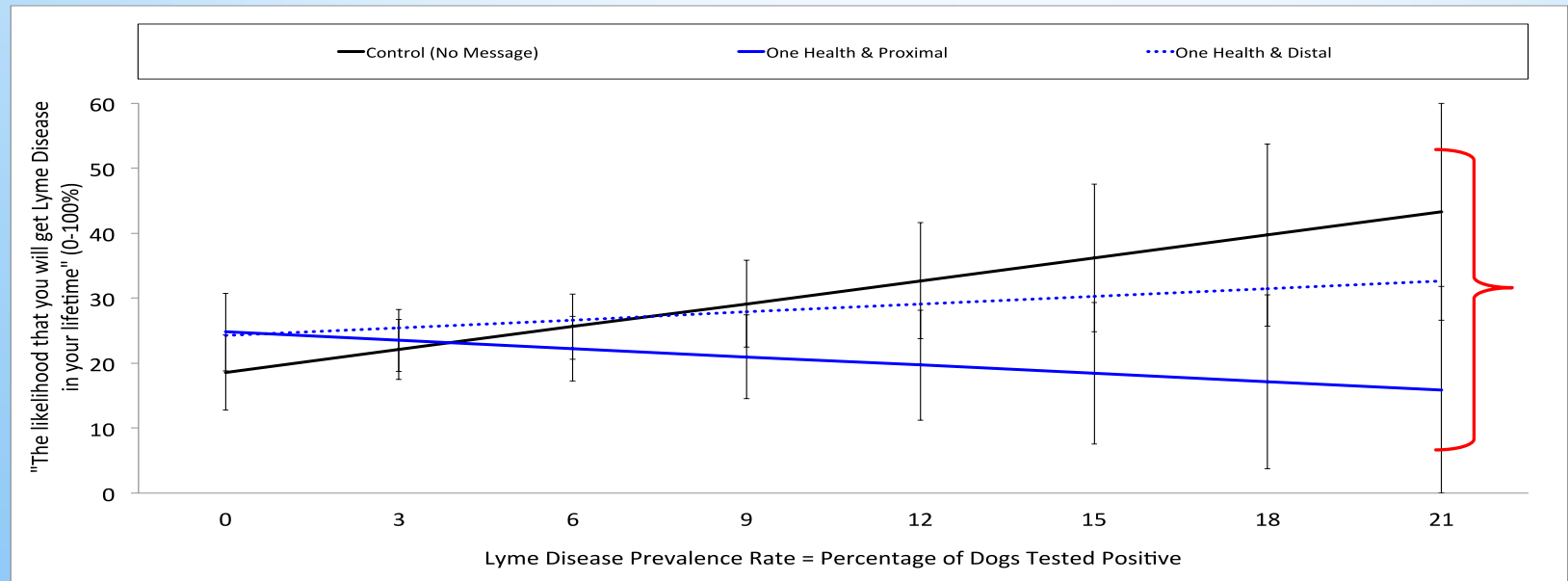
What about have unintended effects?



Perceptions of Lyme Disease Risk Relative to Prevalence of Risk: Expected Effects



Effects of Messages Aiming to Increase Risk Perception: Decreased Risk Perceptions



Key Takeaways



- Most Americans agree that climate change is occurring...
 - ...but individual, social, and institutional/cultural factors might lead them to disavow it.
- Communication efforts can consider ways to frame information to connect to core values
- Efficacy information is important
- Avoid unintended consequences by pre-testing messages with target audiences whenever possible



Thank You!

Extra Slides



What Contributes to the Divide?

Sources of Information



 **Climate Nexus**
@ClimateNexus

Climate change denier Sarah
as much a scientist as I am'!



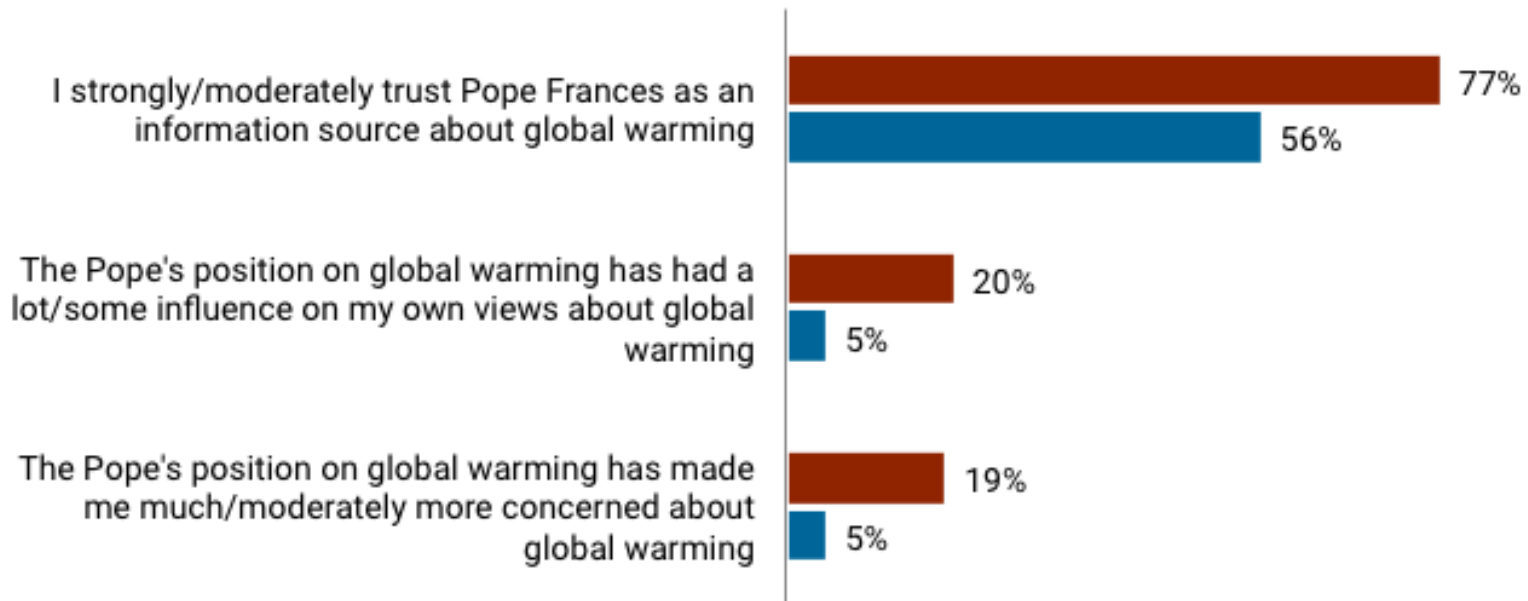
RETWEETS 3 LIKES 4

1:26 PM - 15 Apr 2016



Pope Francis's Teachings About Global Warming Have Had an Impact on Americans, Especially Catholics

■ Catholic Americans (n=293) ■ Not Catholic (n=1,037)



How much do you trust or distrust the following as a source of information about global warming...?
How much impact, if any, has the Pope's position on global warming had on your own views about global warming?
Has the Pope's position on global warming made you..?

Base: Americans 18+ (n=1,330). October, 2015.

Note: Results in this chart differ slightly from results for the same question presented in Maibach, E., Leiserowitz, A., Roser-Renouf, C., Myers, T., Rosenthal, S. & Feinberg, G. (2015) *The Francis Effect: How Pope Francis Changed the Conversation about Global Warming*, which reported on a separate national survey conducted using a different methodology.



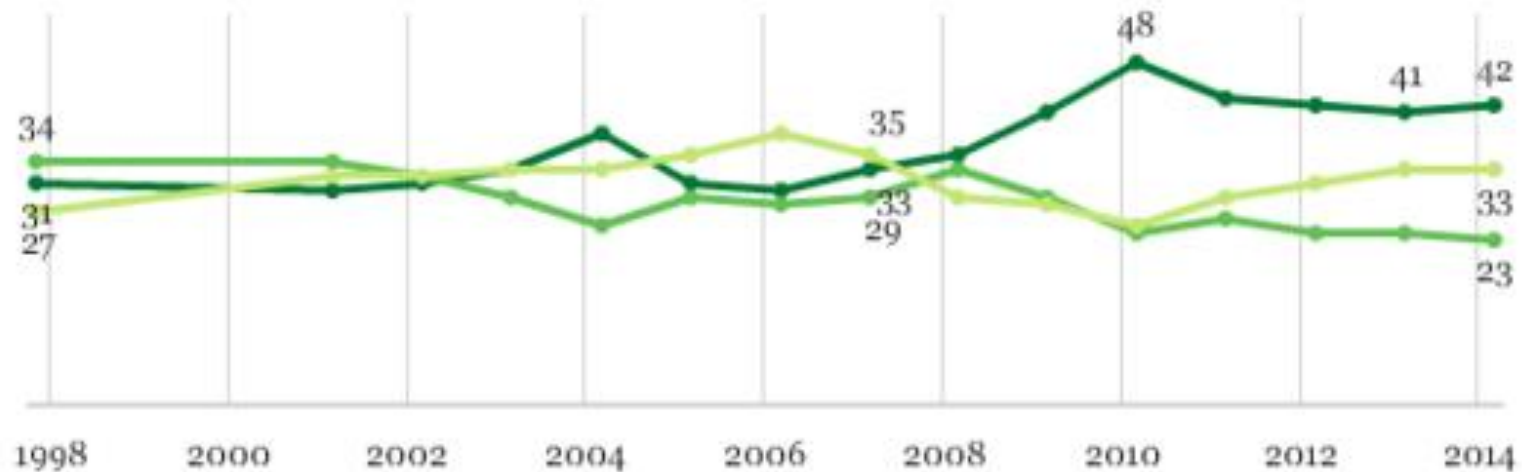
What Contributes to the Divide?

Media Coverage

Americans Rate the Seriousness of Global Warming

Thinking about what is said in the news, in your view is the seriousness of global warming --
[ROTATED: generally exaggerated, generally correct, or is it generally underestimated]?

■ % Generally exaggerated ■ % Generally correct ■ % Generally underestimated



GALLUP

<http://www.gallup.com/poll/167960/americans-likely-say-global-warming-exaggerated.aspx?version=print>

Seriousness of Global Warming by Self-Identified Political Affiliation

Thinking about what is said in the news, in your view is the seriousness of global warming --
[ROTATED: generally exaggerated, generally correct, or is it generally underestimated]?

	Republicans	Independents	Democrats
	%	%	%
Generally exaggerated	68	45	18
Generally correct	15	21	32
Generally underestimated	15	32	49

March 6-9, 2014

GALLUP®

<http://www.gallup.com/poll/167960/americans-likely-say-global-warming-exaggerated.aspx?version=print>

UN Scientists: Climate Change Evidence Unequivocal

By Julia Ritchey
Washington
26 February 2009

Scientists for the United Nations Intergovernmental Panel on Climate Change, or IPCC, say the group's latest findings on global warming show rapidly increasing carbon dioxide emissions and quickly shrinking Arctic ice. To compound matters, a separate study released on Wednesday finds that the melting of polar ice is more severe than previously thought.

The Chairman of the IPCC, RK Pachauri, said 11 of the last 12 years were among the warmest for global surface temperature in recorded history. Pachauri testified before the Senate Committee on Environment and Public Works on the IPCC's latest findings on global warming.

He said climate change will impact some parts of the world more severely than others.

"In Africa, for instance, by 2020 our projections show that 75 to 250 million people would be affected by water stress on account of climate change, and crop revenues could drop very rapidly," said R.K. Pachauri. "We are really causing major distortions and disparities in economic development and growth throughout the world."

Pachauri's testimony coincided with another study by the U.N.-backed International Polar Year program, which found that icecaps at both the North and South Poles are melting at unprecedented rate. The report, compiled by scientists from more than 60 countries, also says that the shrinking of polar and Greenland ice is fueling a rise in sea levels and the potential for dramatic changes in the global climate system.

The authors say the Arctic permafrost also reveals larger amounts of carbon than expected that, with further melting, could release more greenhouse gasses into the atmosphere.

Christopher Field, a contributor to the IPCC report, told the Senate Committee that temperatures at the South Pole are rising faster than expected.

"Just within the last few months we've seen confirmation that the continent of Antarctica has been warming," he said. "And it's been warming at a rate of almost 0.2 degrees Fahrenheit per decade, comparable in pace to much of the rest of the Southern Hemisphere."

Pachauri and Field say the costs of mitigating human generated carbon dioxide, or CO₂, emissions are modest compared to the costs of doing nothing. Field adds that the U.N.'s Intergovernmental Panel on Climate Change says if CO₂ levels are left unchecked, the earth's temperature could rise several degrees by the end of the century.

Scientists who are skeptical of the severity of global warming contend that there is no way to measure the impact of human activity on climate and that no one knows how much warming will occur or how it might affect the earth. Some experts suggest that global warming may be part of natural climate cycles that humans can do little about.



Large pieces of ice drifting off after separating from an Ice Shelf (File)

AP Photo