Values, ideologies, and the climate controversy: Lessons for communicating climate change

Stuart Carlton, Ph.D.
Texas Sea Grant

Sea Grant
Texas
AT TEXAS A&M UNIVERSITY
TexasSeaGrant.org

Problem

85%

of scientists think public knowledge of science is a major problem

http://people-press.org/report/528/

76%

of scientists think news media don't distinguish between well-founded and unfounded science

48%

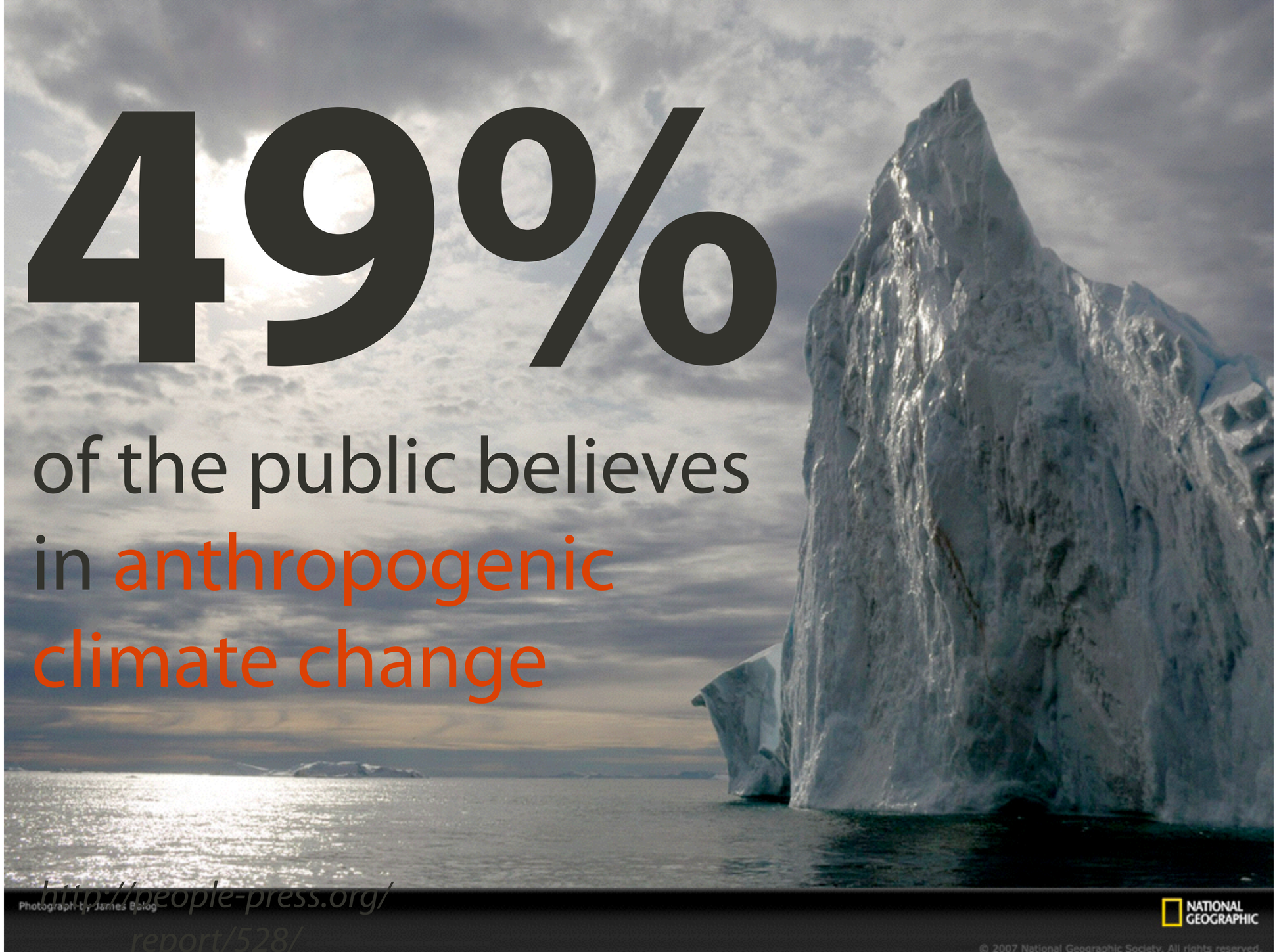
of scientists think news media oversimplify science

http://people-press.org/report/528/

Photo: Flickr user san_drino

Scientists think that the public doesn't understand science.

The public agrees.


49%
of the public believes
in anthropogenic
climate change
http://people-press.org/
report/528/
Photograph by James Balog
NATIONAL GEOGRAPHIC
© 2007 National Geographic Society. All rights reserved.

32%

of the public believes in

human evolution

http://people-press.org/report/528/

Photo: Smithsonian Institute

73%

of the public believes in ESP or other paranormal phenomena

Photo: Wikimedia Commons

http://www.gallup.com/poll/16915/three-four-americans-believe-paranormal.aspx

Scientists and the public don’t always hear each other

Photo: Black County Museums

Why?

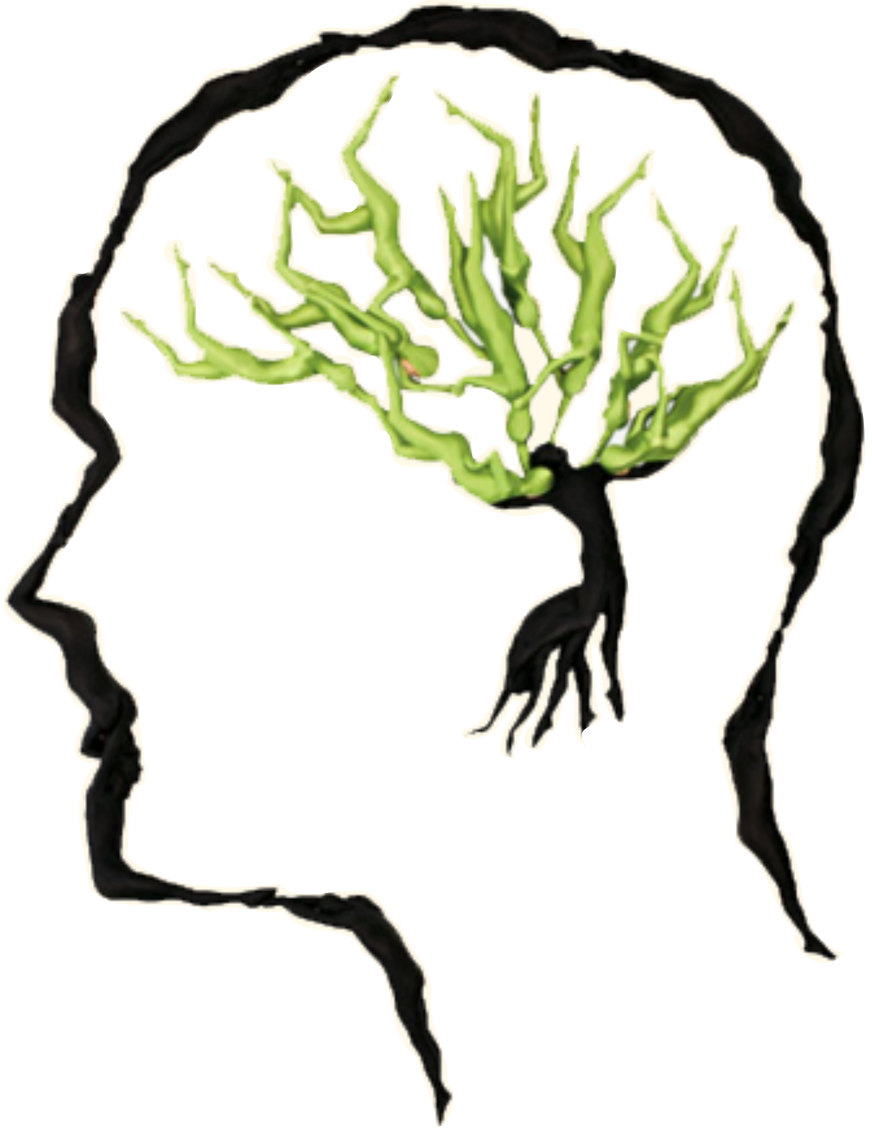


Illustration: Stephen Wilkes

How to talk climate with people who don’t want to listen

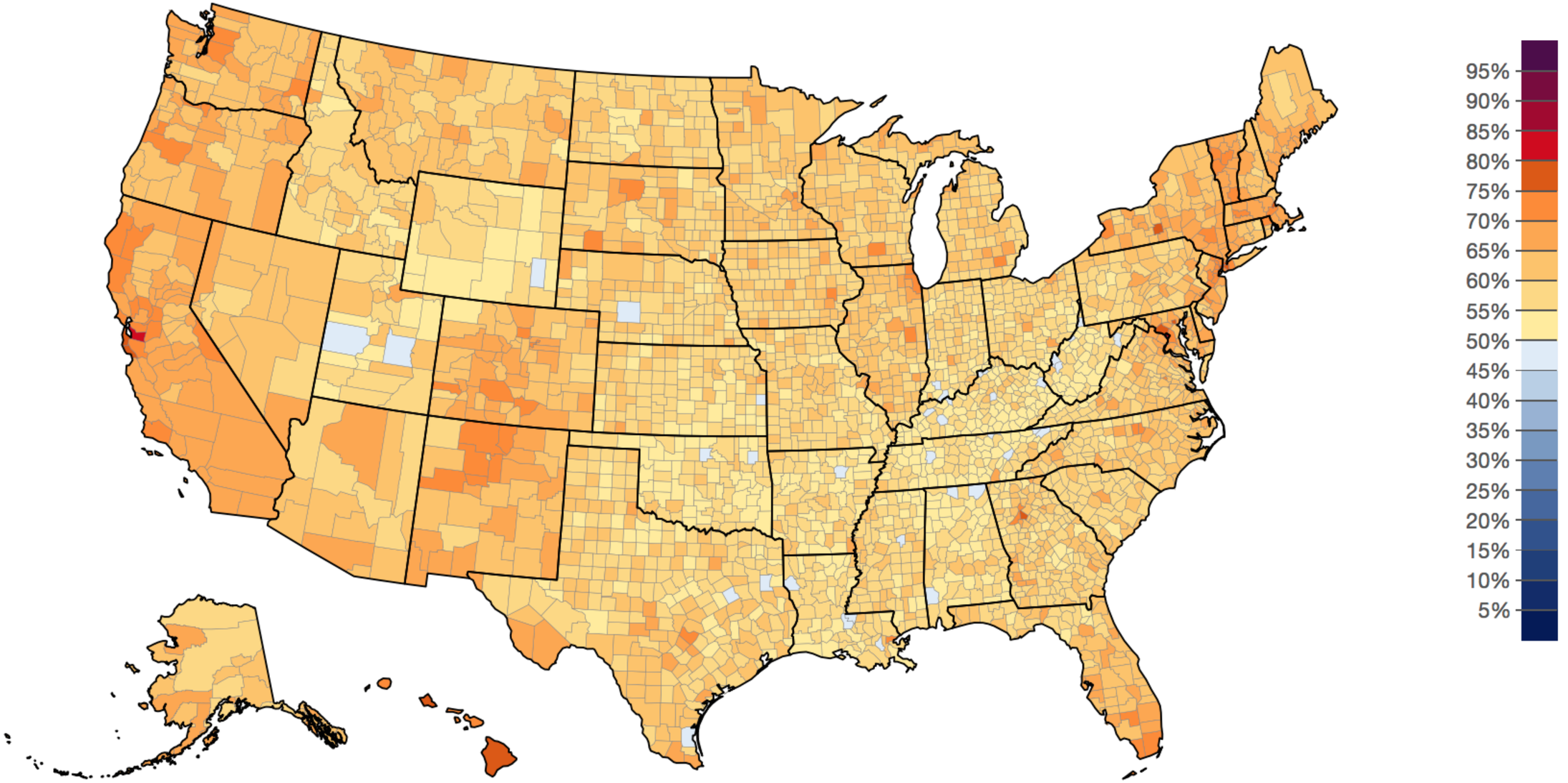
Stuart Carlton, Ph.D.
Texas Sea Grant

3 things social science teaches us about climate change and the American public

Illustration: Stephen Wilkes

1. People still lag behind scientists in climate change belief.

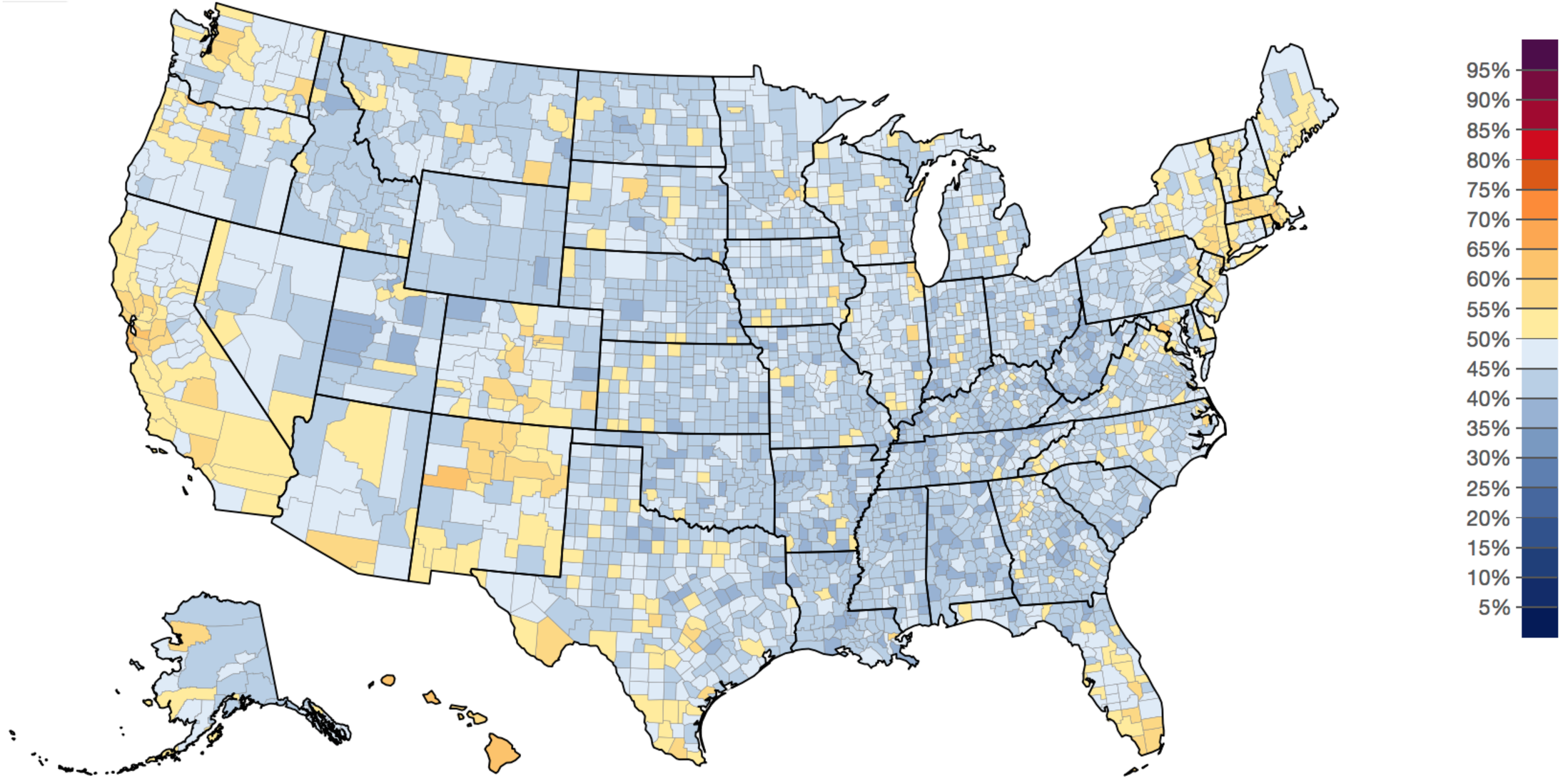
% Adults who think global warming is happening



http://environment.yale.edu/poe/v2014/

Howe et al. 2015

% Adults who think global warming is mostly human-caused



http://environment.yale.edu/poe/v2014/

Howe et al. 2015

environment.yale.edu/climate-communication/article/climate-change-in-the-am

Scholarfy Googlify NYClean Pin PinTag Press This rmnp photo CGI TOS Yo Read Later update moom Pic Tiles q meth Fool Boards My GS DSLRQ2 DSLRQ3 AA amzn Call BMW Method

Show d

Yale SCHOOL OF FORESTRY & ENVIRONMENTAL STUDIES

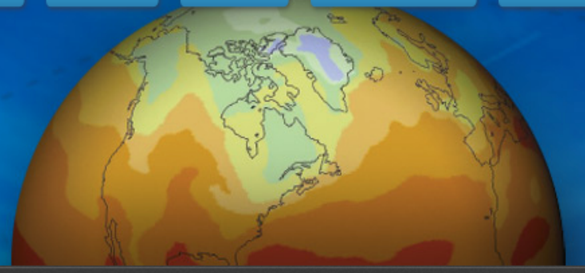
Yale University | Yale School of Forestry & Environmental Studies

YALE PROJECT ON

Climate Change Communication

Bridging Science & Society

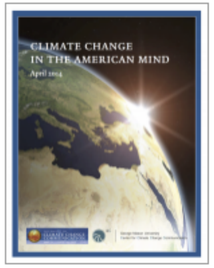
About Research Outreach What Can I Do? Contact



Click Here to Browse Our Research

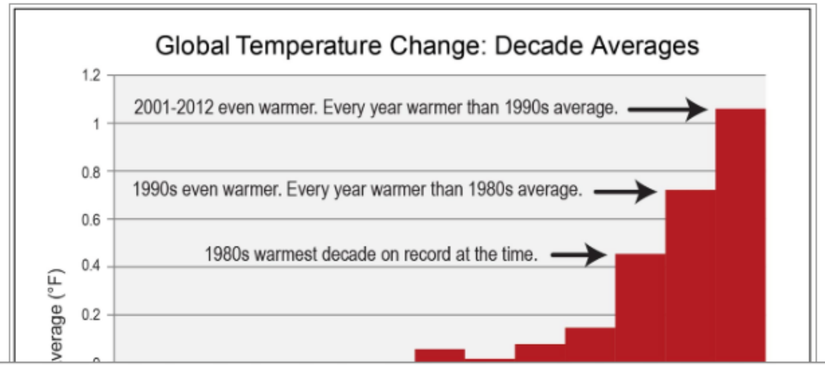
Search our site

Climate Change in the American Mind April 2014



Download the PDF

The reality of climate change – worldwide and in the United States – is a well-established scientific fact. The first finding in the recently released 2014 National Climate Assessment (written and reviewed by hundreds of climate experts over the past 4 years), for example, concluded: "Global climate is changing and this is apparent across the United States in a wide range of observations."

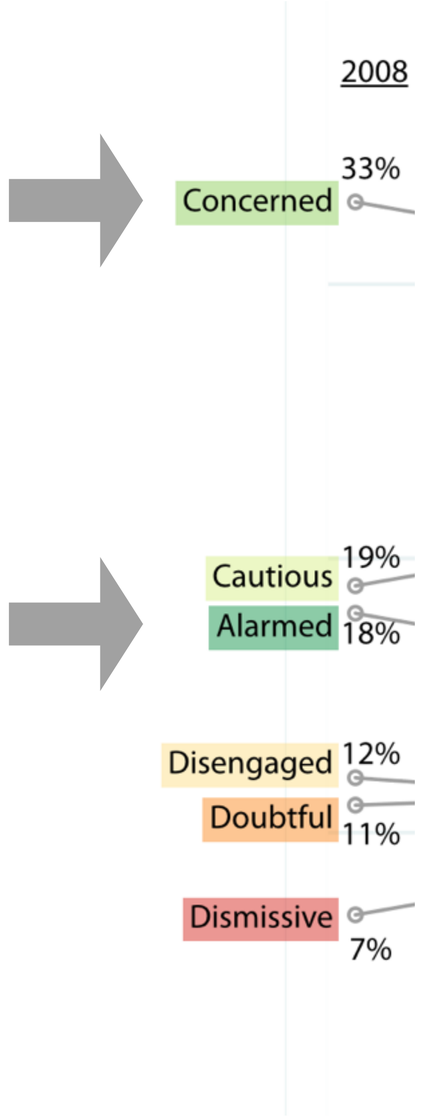


- Climate Notes
- Peer Reviewed Articles
- Research Reports
- Videos and Webinars

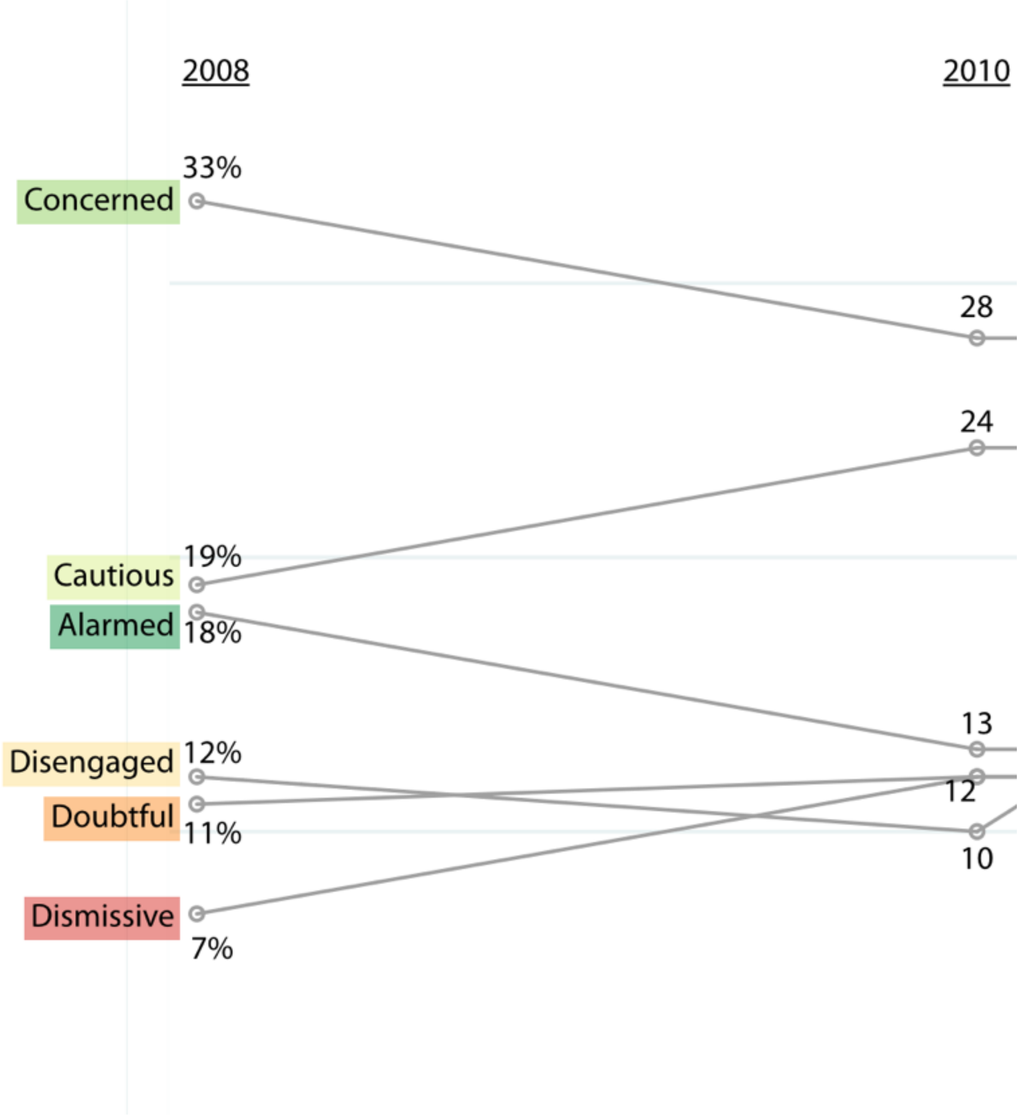
SIGN-UP FOR EMAIL UPDATES

Global Warming's Six Americas

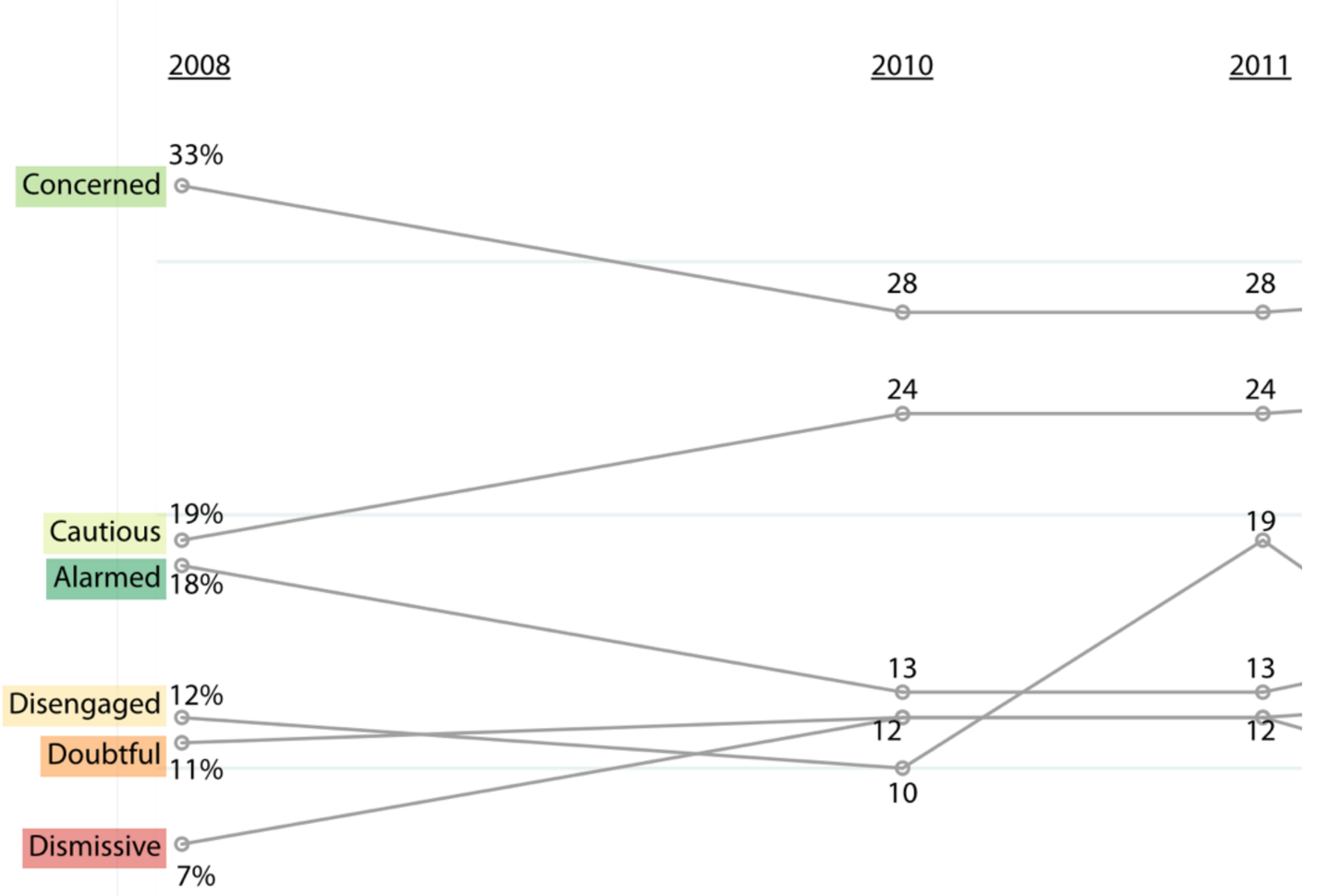
Six Americas Over Time



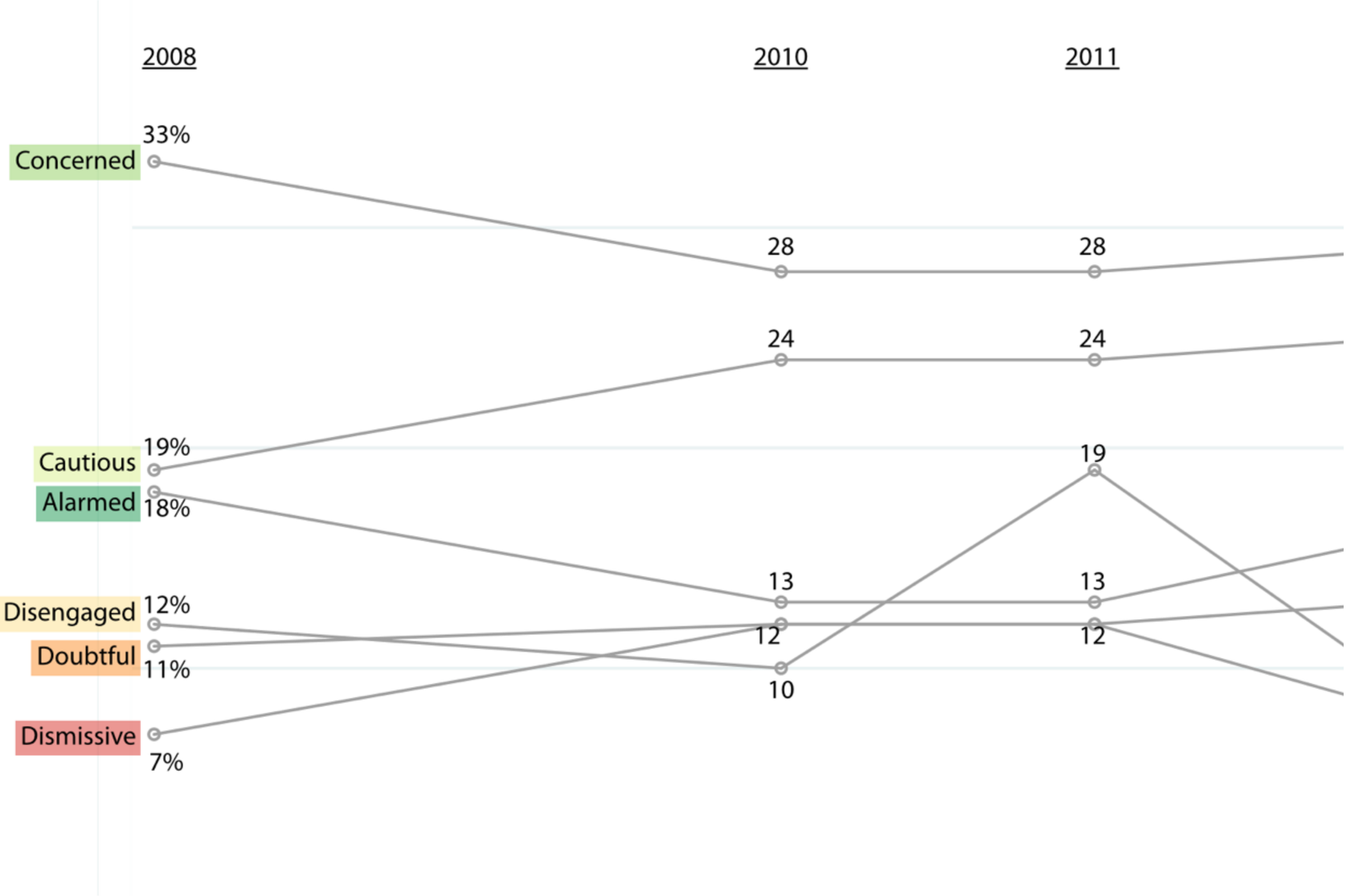
Six Americas Over Time



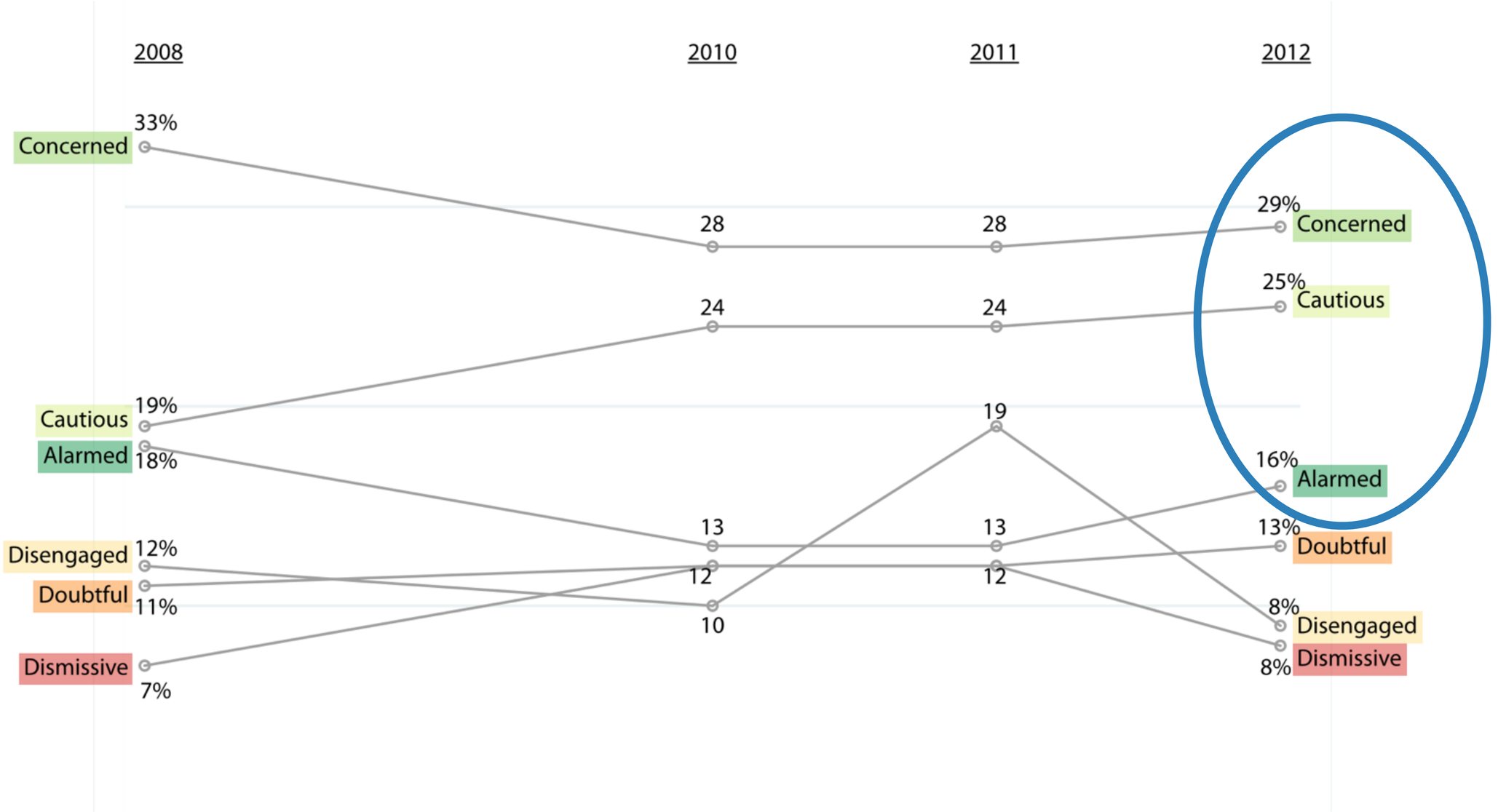
Six Americas Over Time

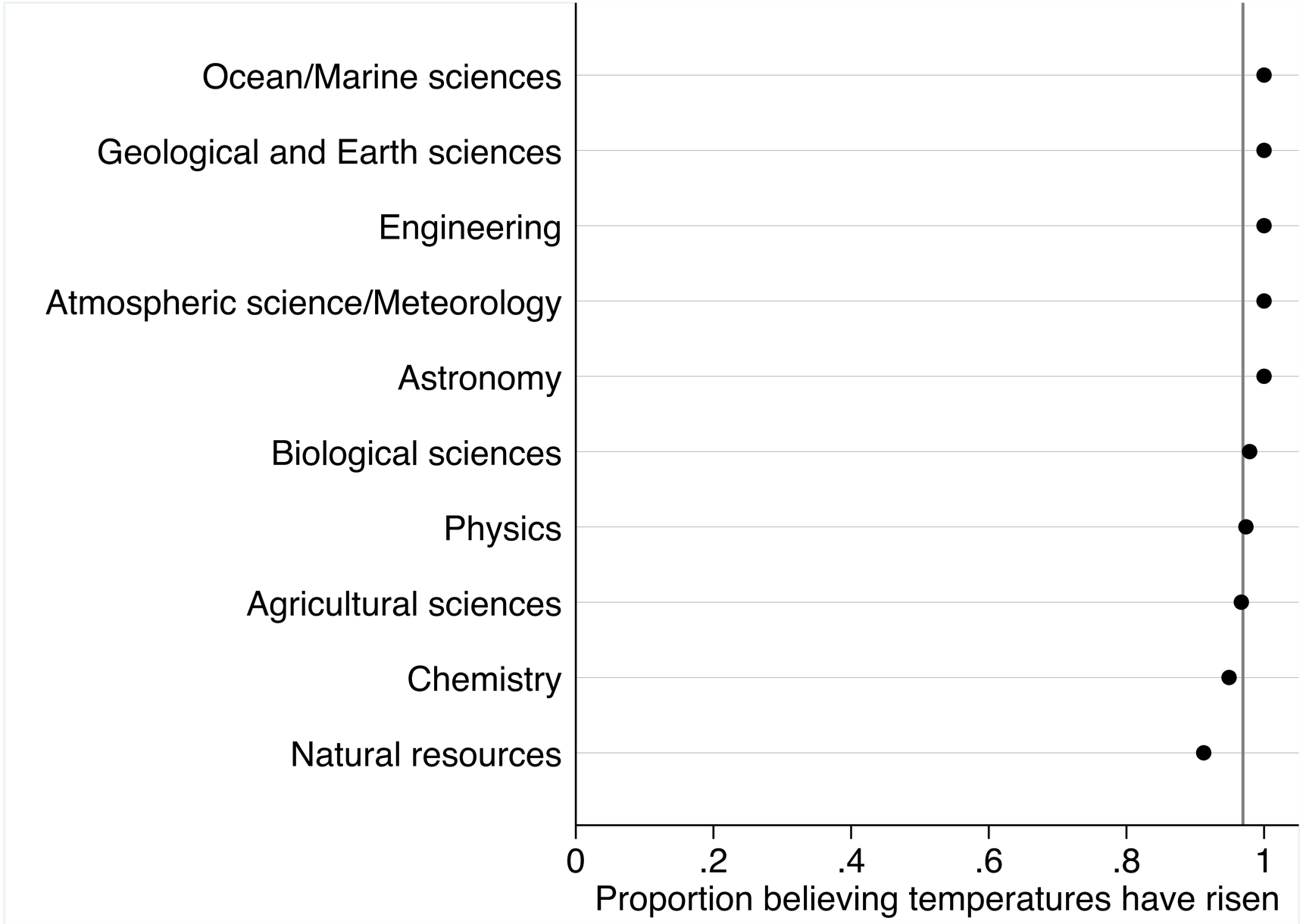


Six Americas Over Time



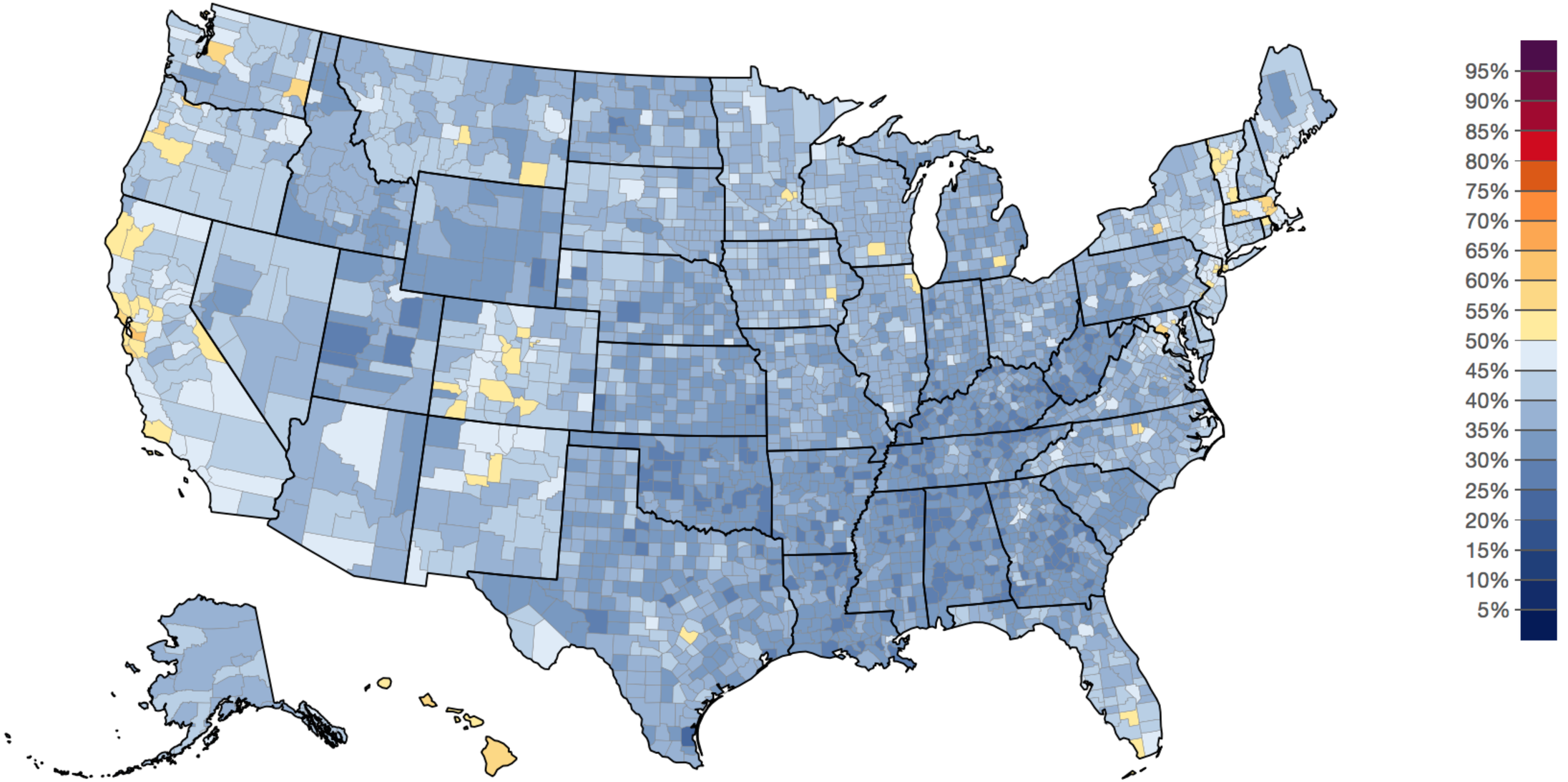
Six Americas Over Time





Source: Carlton et al. in review

% Adults who think most scientists think global warming is happening



http://environment.yale.edu/poe/v2014/

Howe et al. 2015

2. Lack of knowledge is not the (primary) problem

the Cultural Cognition Project at Yale Law School

YALE LAW SCHOOL

follow CCP

Follow @cult_cognition

Find us on Facebook

current projects

Protecting the Vaccine Science Communication Environment

Facts and Law

Nanotechnology Risk Perceptions

Mechanisms of Cultural Cognition

Gun Risk Perceptions

recent papers

The laws of cognition and the cognition of law

"Ordinary Science Intelligence": A Science Comprehension Measure for Use in the Study of Risk Perception and Science Communication

Climate Science Communication and the Measurement Problem

popular papers

The Cultural Cognition Project is a group of scholars interested in studying how cultural values shape public risk perceptions and related policy beliefs. Cultural cognition refers to the tendency of individuals to conform their beliefs about disputed matters of fact (e.g., whether global warming is a serious threat; whether the death penalty deters murder; whether gun control makes society more safe or less) to values that define their cultural identities. Project members are using the methods of various disciplines -- including social psychology, anthropology, communications, and political science -- to chart the impact of this phenomenon and to identify the mechanisms through which it operates. The Project also has an explicit normative objective: to identify processes of democratic decisionmaking by which society can resolve culturally grounded differences in belief in a manner that is both congenial to persons of diverse cultural outlooks and consistent with sound public policymaking.

Below are examples of CCP studies and research projects.

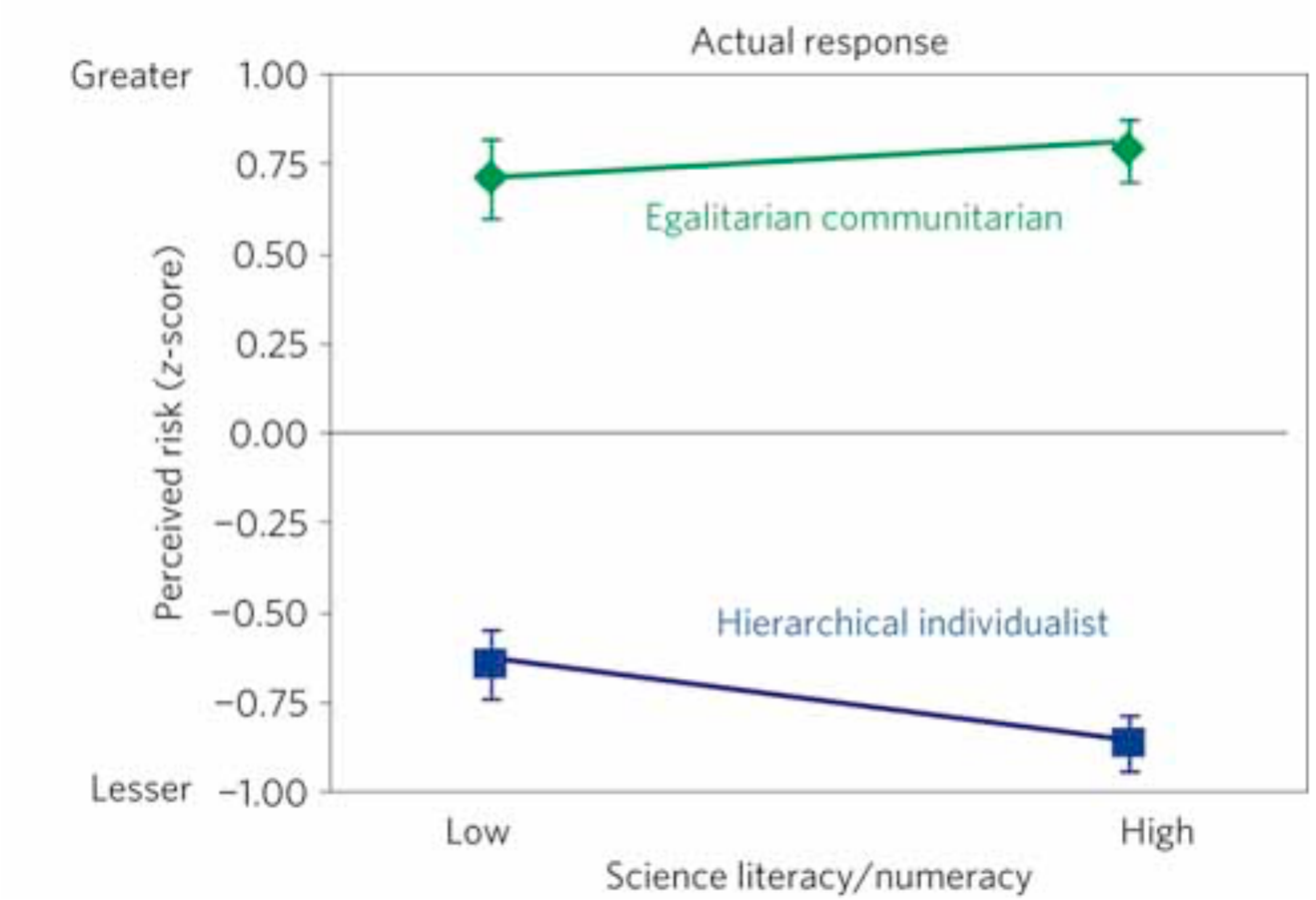
Cultural Cognition of Scientific Consensus

Why doesn't "scientific consensus" settle disputes about climate change and other issues? The answer, a CCP experimental study suggests, is not that only some citizens view scientific opinion as important, but rather that citizens of diverse cultural outlooks form different perceptions of what most scientists believe. (Published in the *Journal of Risk Research*.)

A Risky Science Communication Environment for Vaccines

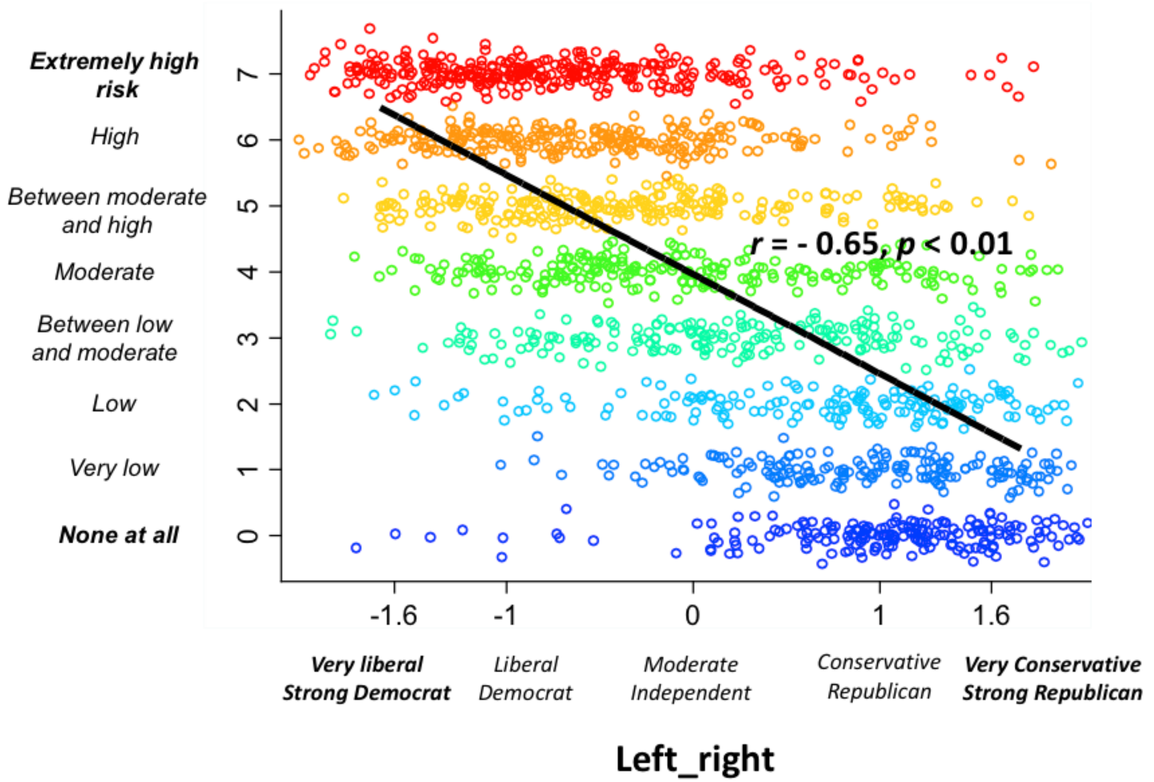
Vaccine Science Communication Environment

This project has two goals: first, to enlarge societal understanding of how to promote informed public engagement with valid empirical evidence on the efficacy and safety of vaccines; and second, to advance societal recognition of the need to use valid empirical evidence to guide communication on vaccines and other applications of science essential to societal well-being.



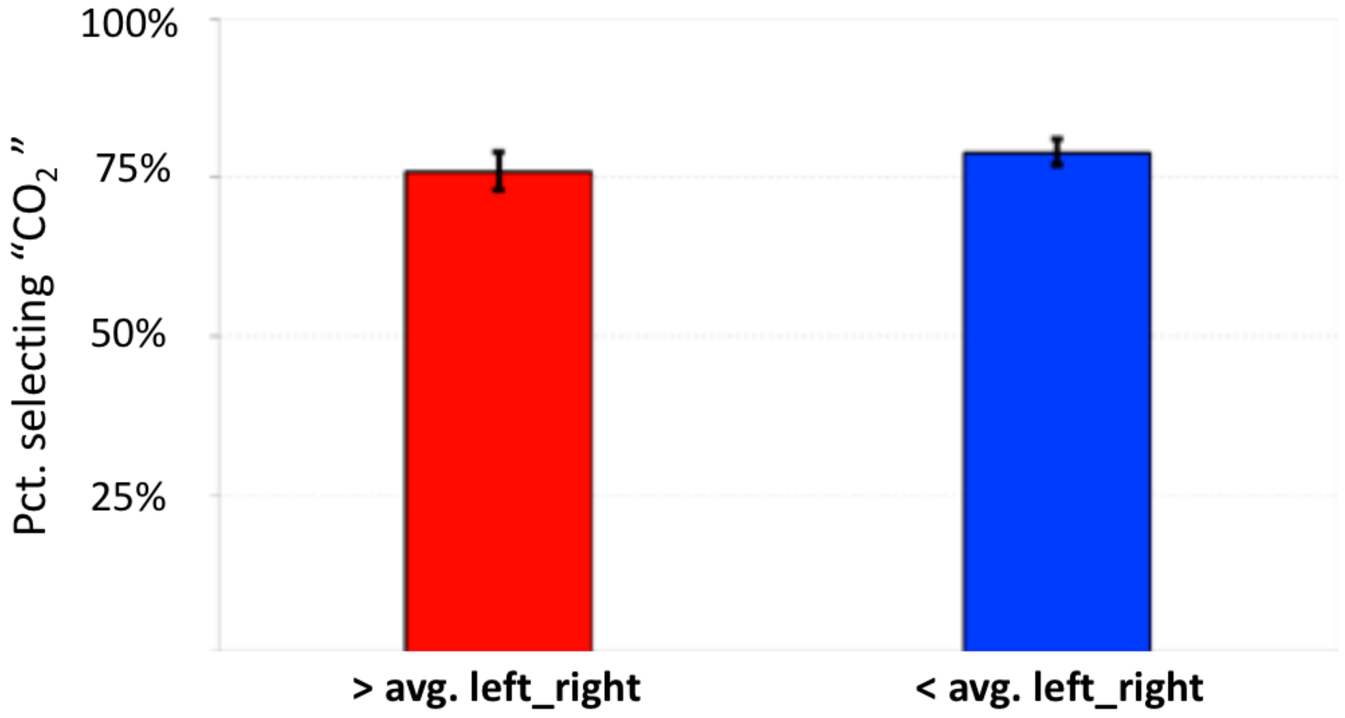
Source: Kahan et al., 2012.

*"How much risk do you believe **global warming** poses to human health, safety, or prosperity?"*

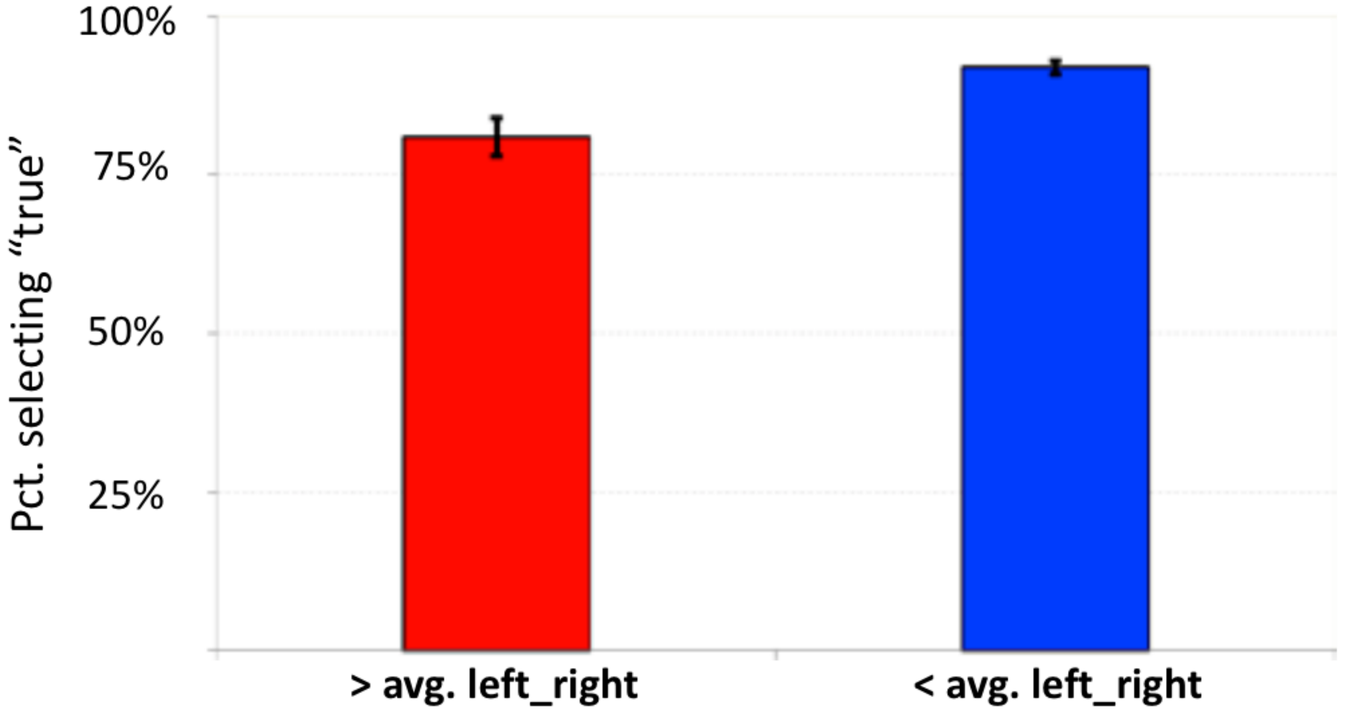


Source: Kahan et al., in press.

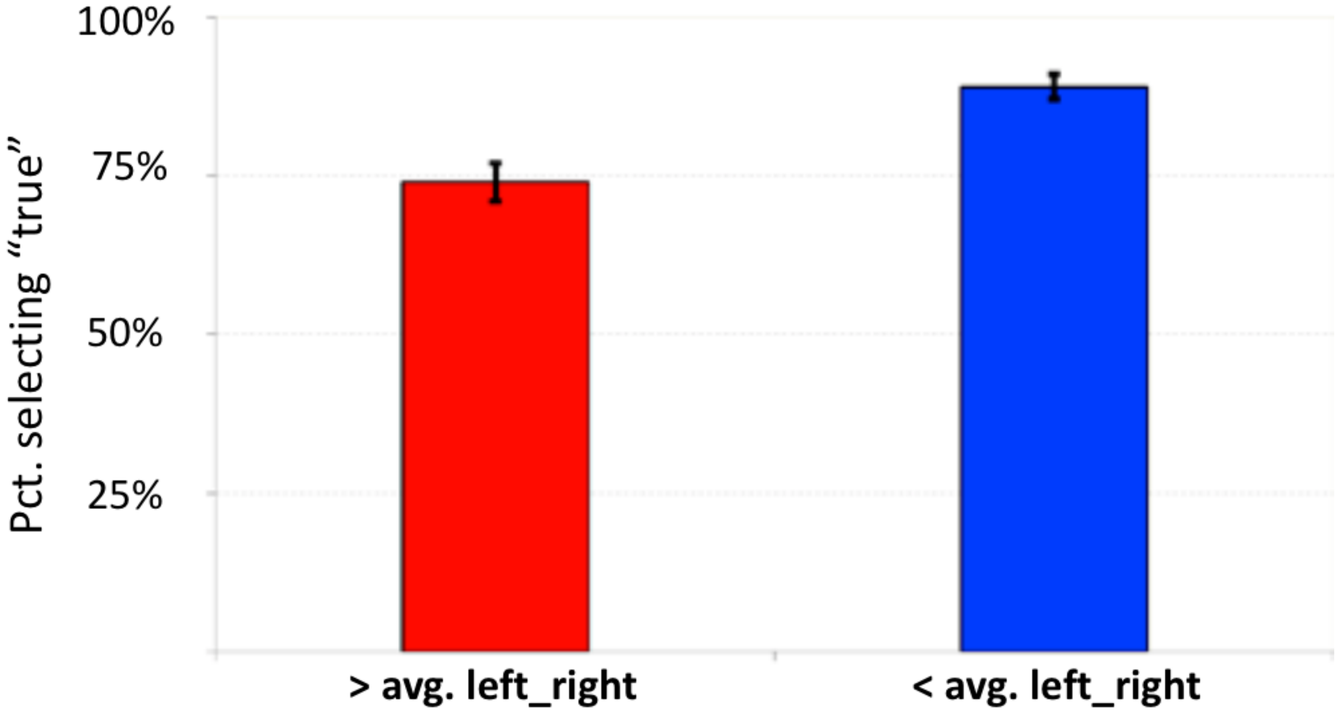
"What gas do most scientists believe causes temperatures in the atmosphere to rise? Is it [hydrogen, helium, carbon dioxide, radon]?"



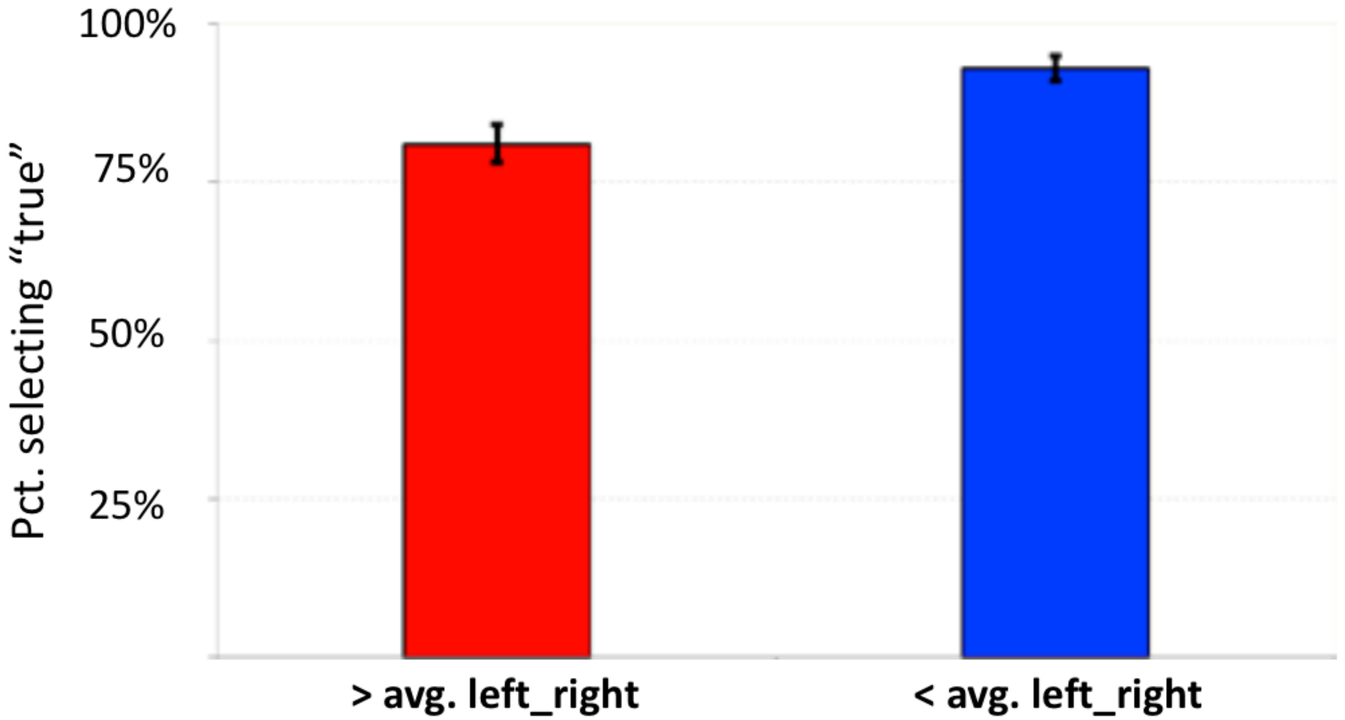
"the increase of atmospheric carbon dioxide associated with the burning of fossil fuels will reduce photosynthesis by plants" [true <u>false</u>]



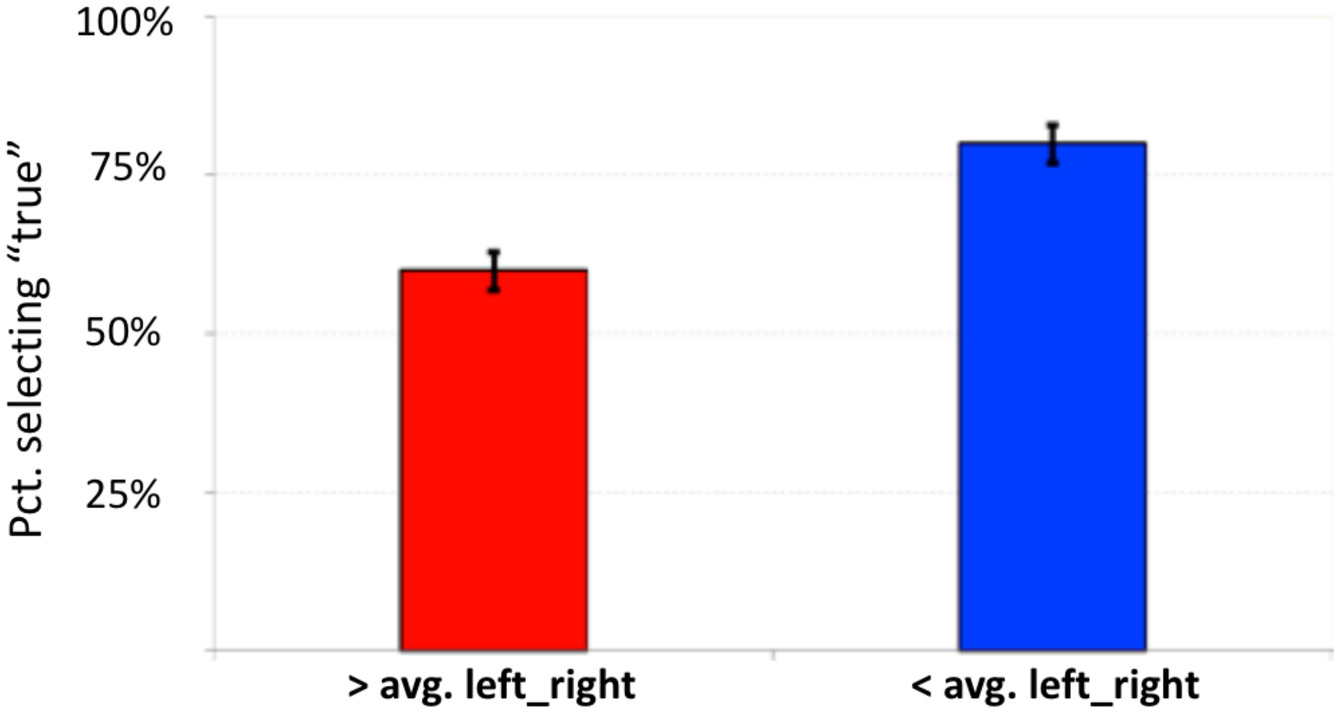
"human-caused global warming will result in flooding of many coastal region" [true false]



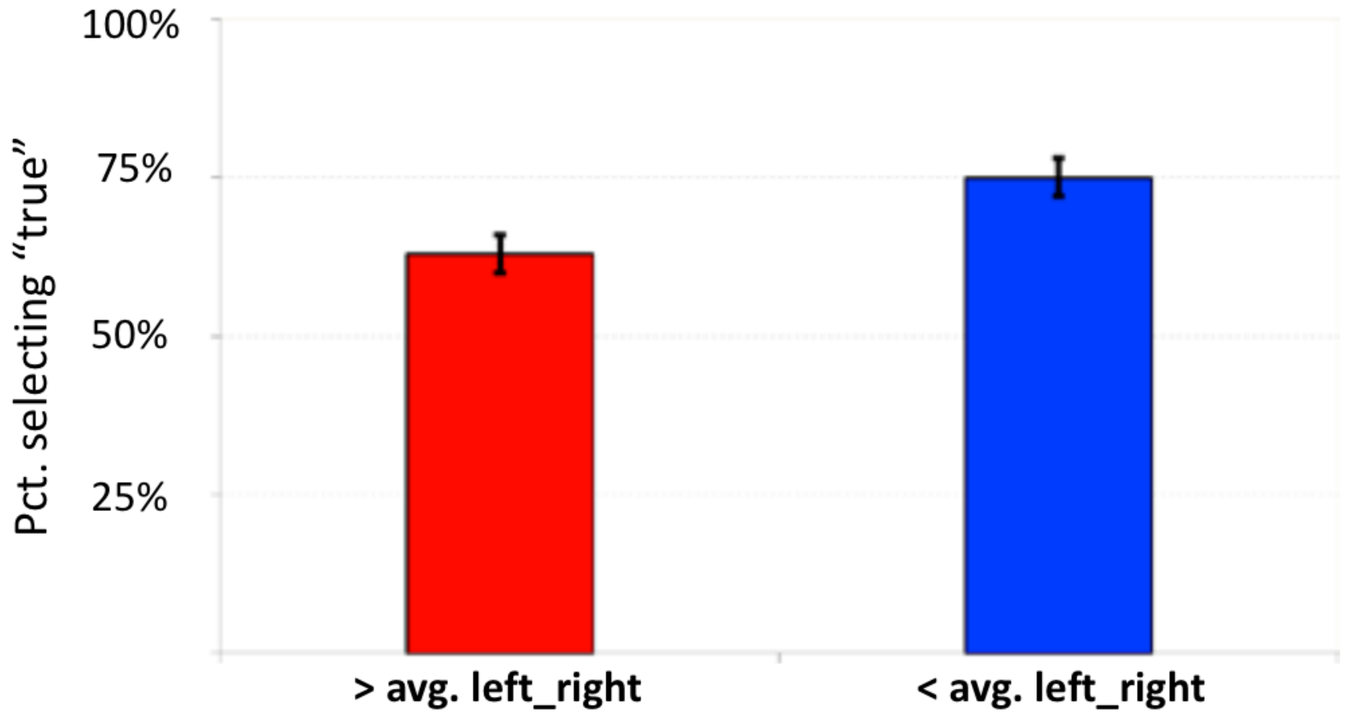
"if the North Pole icecap melted as a result of human-caused global warming, global sea levels would rise"
[true <u>false</u>]



"globally averaged surface air temperatures were higher for the first decade of the twenty-first century (2000-2009) than for the last decade of the twentieth century (1990-1999)" [true false]

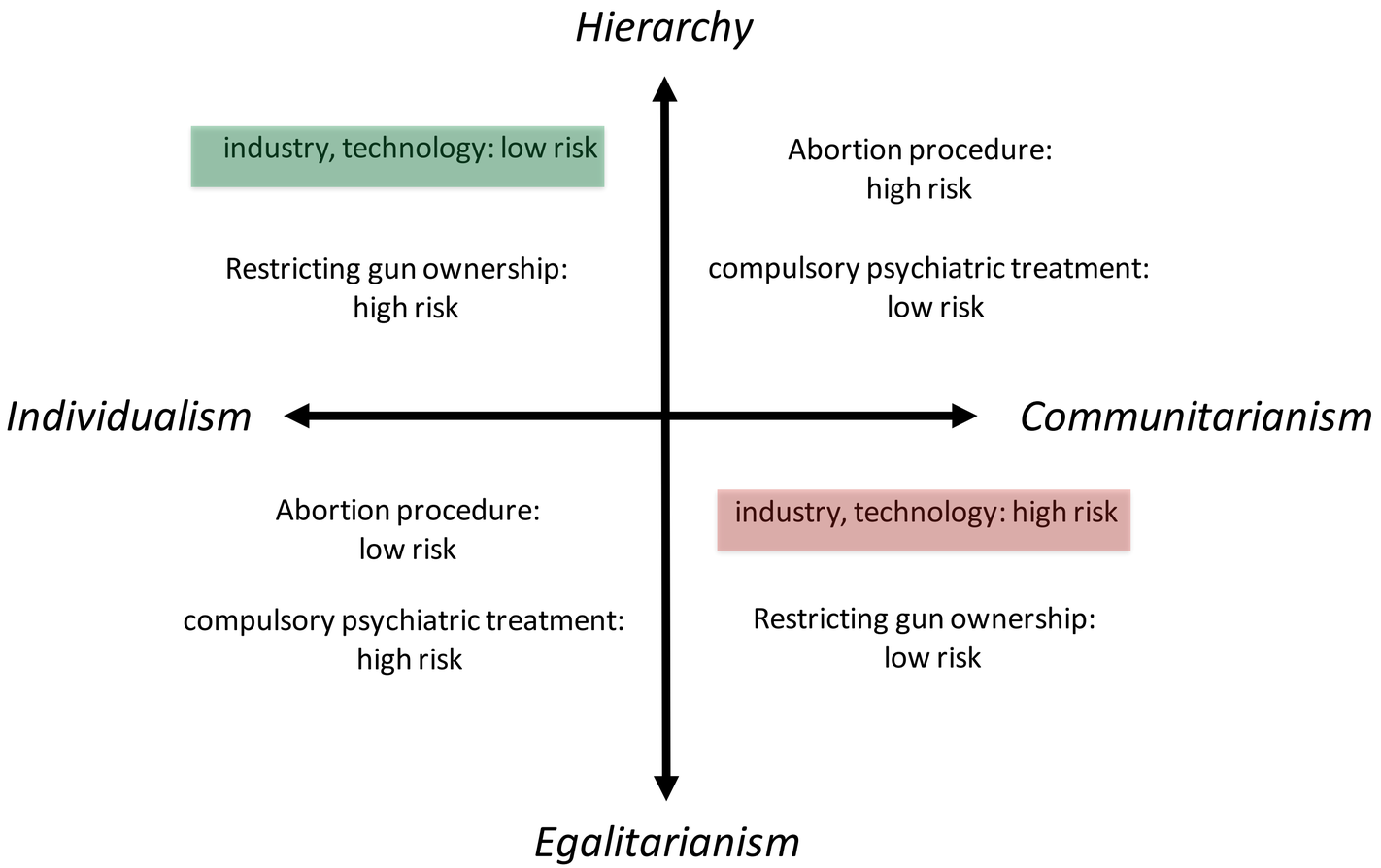


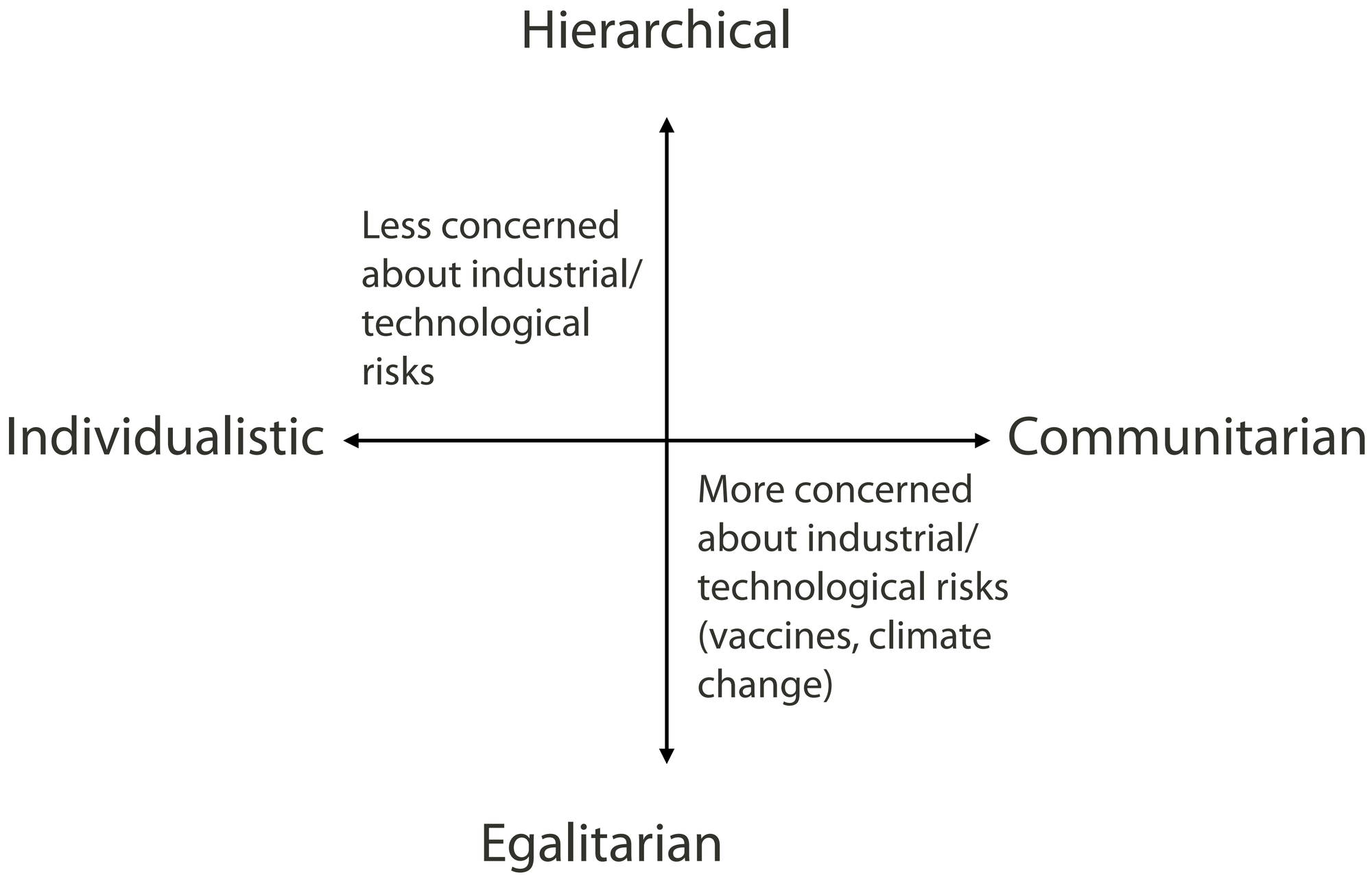
"human-caused global warming will increase the risk of skin cancer in human beings" [true <u>false</u>]



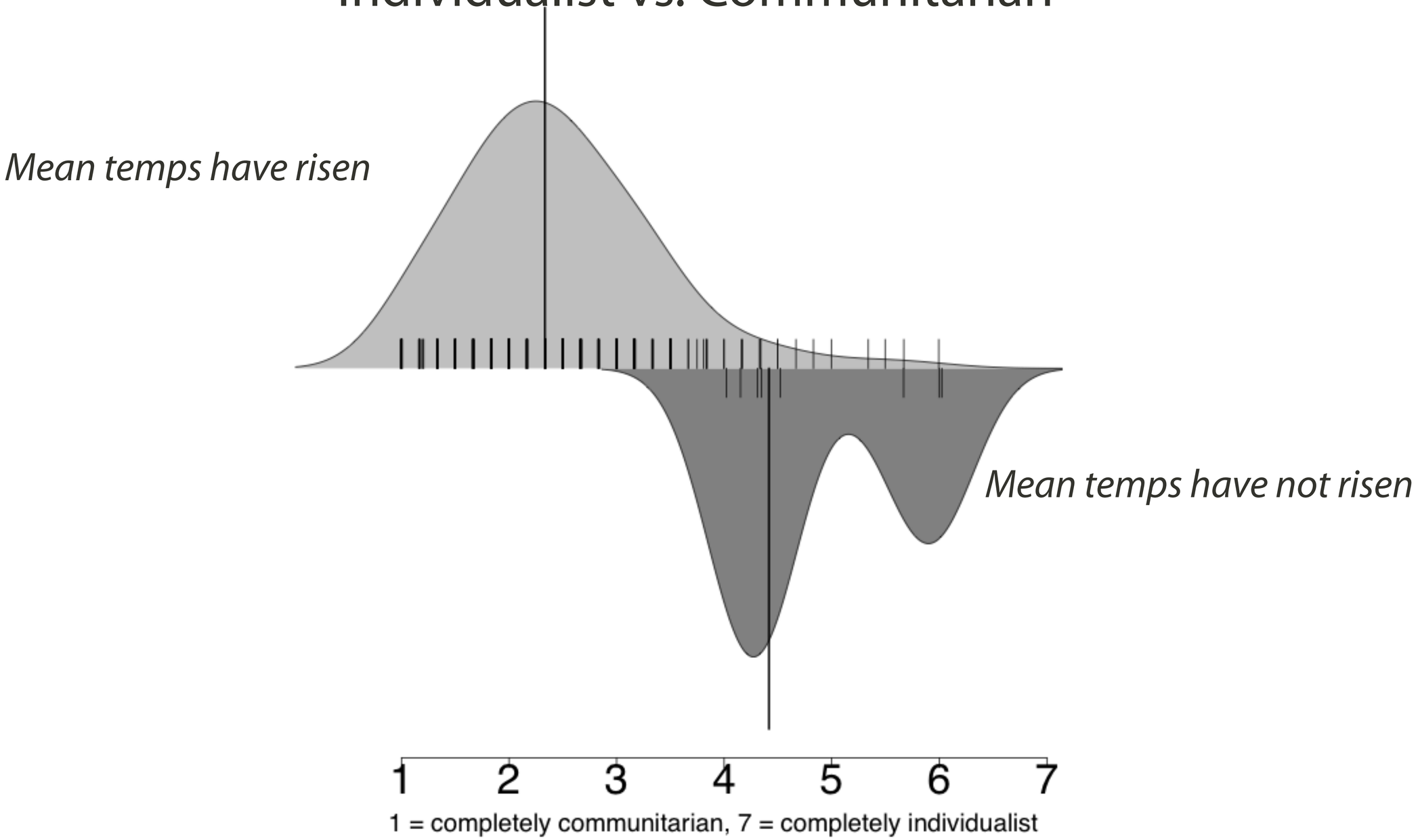
When people say they don’t believe in climate change, they are expressing their **identity**, not their **knowledge**.

Cultural Cognition of Risk




Hierarchical
Less concerned about industrial/ technological risks
Individualistic
Communitarian
More concerned about industrial/ technological risks (vaccines, climate change)
Egalitarian

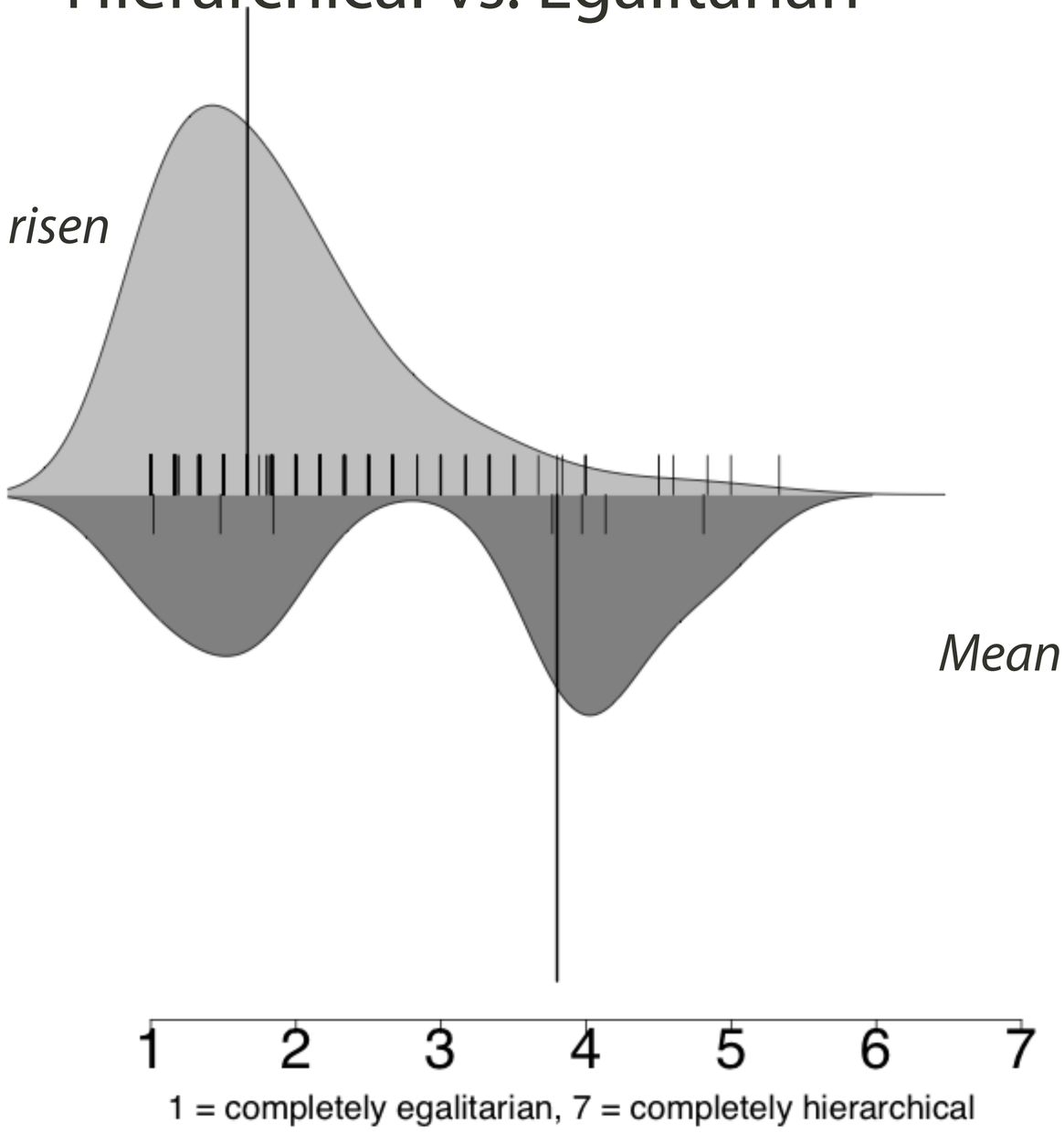
Individualist vs. Communitarian



Source: Carlton et al., in review.

Hierarchical vs. Egalitarian

Mean temps have risen



Mean temps have not risen

Source: Carlton et al., in review.

3. The human brain is hard-wired not to worry about climate change

R. Gifford 2011. *American Psychologist* 66: 290–302

The Dragons of Inaction

Psychological Barriers That Limit Climate Change Mitigation and Adaptation

Robert Gifford
University of Victoria

Most people think climate change and sustainability are important problems, but too few global citizens engaged in high-greenhouse-gas-emitting behavior are engaged in enough mitigating behavior to stem the increasing flow of greenhouse gases and other environmental problems. Why is that? Structural barriers such as a climate-averse infrastructure are part of the answer, but psychological barriers also impede behavioral choices that would facilitate mitigation, adaptation, and environmental sustainability. Although many individuals are engaged in some ameliorative action, most could do more, but they are hindered by seven categories of psychological barriers, or "dragons of inaction": limited cognition about the problem, ideological worldviews that tend to preclude pro-environmental attitudes and behavior, comparisons with key other people, sunk costs and behavioral momentum, discredence toward experts and authorities, perceived risks of change, and positive but inadequate behavior change. Structural barriers must be removed wherever possible, but this is unlikely to be sufficient. Psychologists must work with other scientists, technical experts, and policymakers to help citizens overcome these psychological barriers.

Keywords: climate change, barriers, obstacles, global warming, sustainability

> It was our fault, and our very great fault—
> and now we must turn it to use.
> We have forty million reasons for failure,
> but not a single excuse.
> So the more we work and the less we talk
> the better results we shall get . . .
>
> —Rudyard Kipling, "The Lesson," 1901

If so many people are concerned about climate change, the environment, and sustainability, why are more of us not doing what is necessary to ameliorate the problems? Of course, many individuals and organizations have already taken some steps in this direction, and some have taken many steps. However, in the aggregate, humans continue to produce massive quantities of greenhouse gases that will further drive climate change, and we continue to engage in other environmentally destructive behavior patterns.

In some cases, the reasons for this behavioral deficit are structural and therefore beyond an individual's reasonable control. For example, low income severely limits one's ability to purchase solar panels, living in a rural area usually means public transport does not exist as an alternative to driving, and living in a region with cold winters restricts one's ability to reduce home-heating-based energy use. However, for almost everyone who is *not* severely restricted by structural barriers, adopting more pro-environmental choices and behaviors is possible, but this adoption is not occurring to the extent necessary to stem the increasing flow of greenhouse gases and other environmental damage. Thus, the question remains: What limits more widespread mitigation, adaptation, and sustainability actions on the part of individuals for whom such actions are feasible?

This article considers seven general psychological barriers as influences that limit environmental behavior change.[1] These barriers are my suggested elucidation of the hoary mystery surrounding the fabled gap between attitude ("I agree this is the best course of action") and behavior ("but I am not doing it") with regard to environmental problems. Some of the barriers are recognized in one psychological research domain or another, but others have not yet become part of our lexicon. Some have been researched (in other domains) much more than others. These barriers have not been considered as a group, although a few social scientists have discussed some of them (e.g., Gifford, 2008; Kollmuss & Agyeman, 2002; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007).

Psychological Barriers to Behavior Change

Once one begins looking, quite a large number of psychological obstacles to adequate (carbon-neutral) climate change mitigation and adaptation may be found. This article arranges 29 of the "dragons of inaction" into seven

Correspondence concerning this article should be addressed to Robert Gifford, Department of Psychology, University of Victoria, Victoria, British Columbia V8S 2H1, Canada. E-mail: rgifford@uvic.ca

[1] These barriers may well limit change in other troublesome behavior domains, but a discussion of those domains remains for another time.

 0003-066X/11/$12.00
Vol. 66, No. 4, 290–302 DOI: 10.1037/a0023566

The Dragons of Inaction

Psychological Barriers That Limit Climate Change Mitigation and Adaptation

…psychological barriers also impede behavioral choices that would facilitate mitigation, adaptation, and environmental sustainability. Although many individuals are engaged in some ameliorative action, most could do more, but they are hindered by seven categories of psychological barriers, or "dragons of inaction"…

to be sufficient. Psychologists must work with other scientists, technical experts, and policymakers to help citizens overcome these psychological barriers.

Keywords: climate change, barriers, obstacles, global warming, sustainability

> It was our fault, and our very great fault—
> and now we must turn it to use.
> We have forty million reasons for failure,
> but not a single excuse.
> So the more we work and the less we talk
> the better results we shall get . . .
>
> —Rudyard Kipling, "The Lesson," 1901

If so many people are concerned about climate change, the environment, and sustainability, why are more of us not doing what is necessary to ameliorate the problems? Of course, many individuals and organizations have already taken some steps in this direction, and some have taken many steps. However, in the aggregate, humans continue to produce massive quantities of greenhouse gases that will further drive climate change, and we continue to engage in other environmentally destructive behavior patterns.

mystery surrounding the fabled gap between attitude ("I agree this is the best course of action") and behavior ("but I am not doing it") with regard to environmental problems. Some of the barriers are recognized in one psychological research domain or another, but others have not yet become part of our lexicon. Some have been researched (in other domains) much more than others. These barriers have not been considered as a group, although a few social scientists have discussed some of them (e.g., Gifford, 2008; Kollmuss & Agyeman, 2002; Lorenzoni, Nicholson-Cole, & Whitmarsh, 2007).

Psychological Barriers to Behavior Change

Once one begins looking, quite a large number of psychological obstacles to adequate (carbon-neutral) climate change mitigation and adaptation may be found. This article arranges 29 of the "dragons of inaction" into seven

Correspondence concerning this article should be addressed to Robert Gifford, Department of Psychology, University of Victoria, Victoria, British Columbia V8S 2H1, Canada. E-mail: rgifford@uvic.ca

[1] These barriers may well limit change in other troublesome behavior domains, but a discussion of those domains remains for another time.

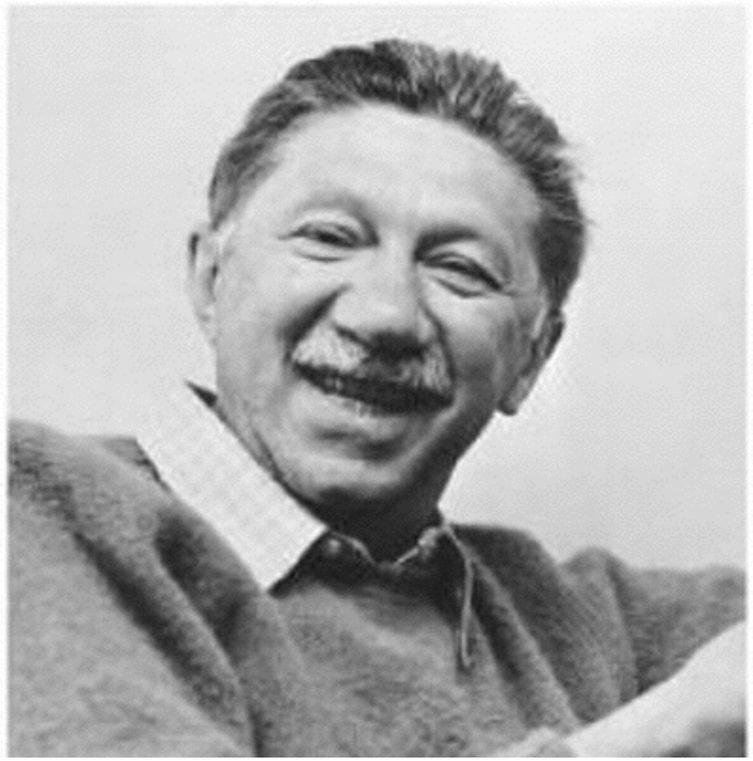
 0003-066X/11/$12.00
Vol. 66, No. 4, 290–302 DOI: 10.1037/a0023566

- Limited cognition (biases, ignorance)
- Ideologies (system justification, technosalvation
- Comparisons with others (norms, perceived inequity)
- Sunk costs (behavioral momentum)
- Discredence (mistrust, denial)
- Perceived risks (of changing behavior)
- Limited behavior (tokenism, rebound effect)

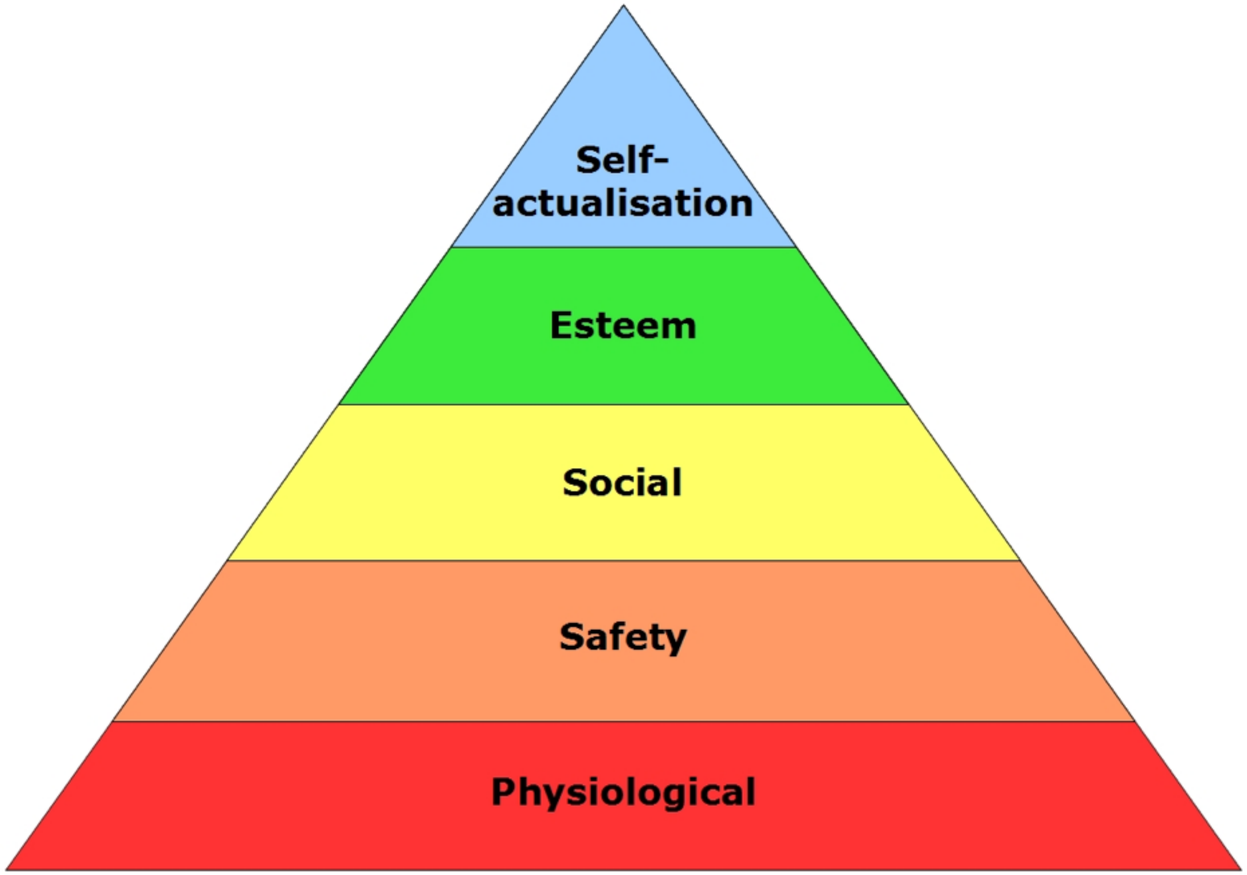
People tend to discount long-term threats

Immediate threats of climate change aren’t readily apparent

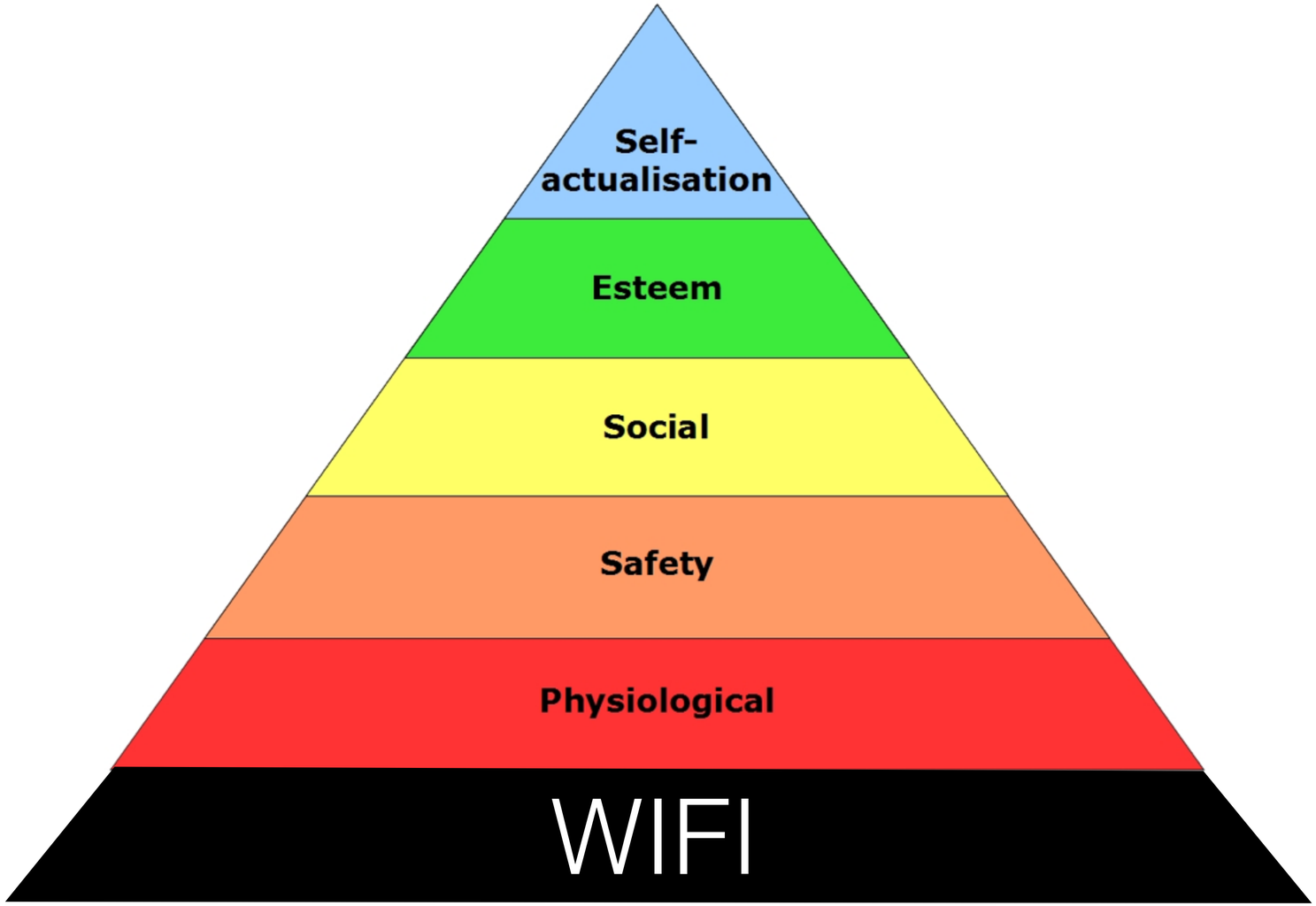
Short-term needs take precedence: there’s only so much worry to go around



Abraham Maslow: *A theory of human motivation (1974)*

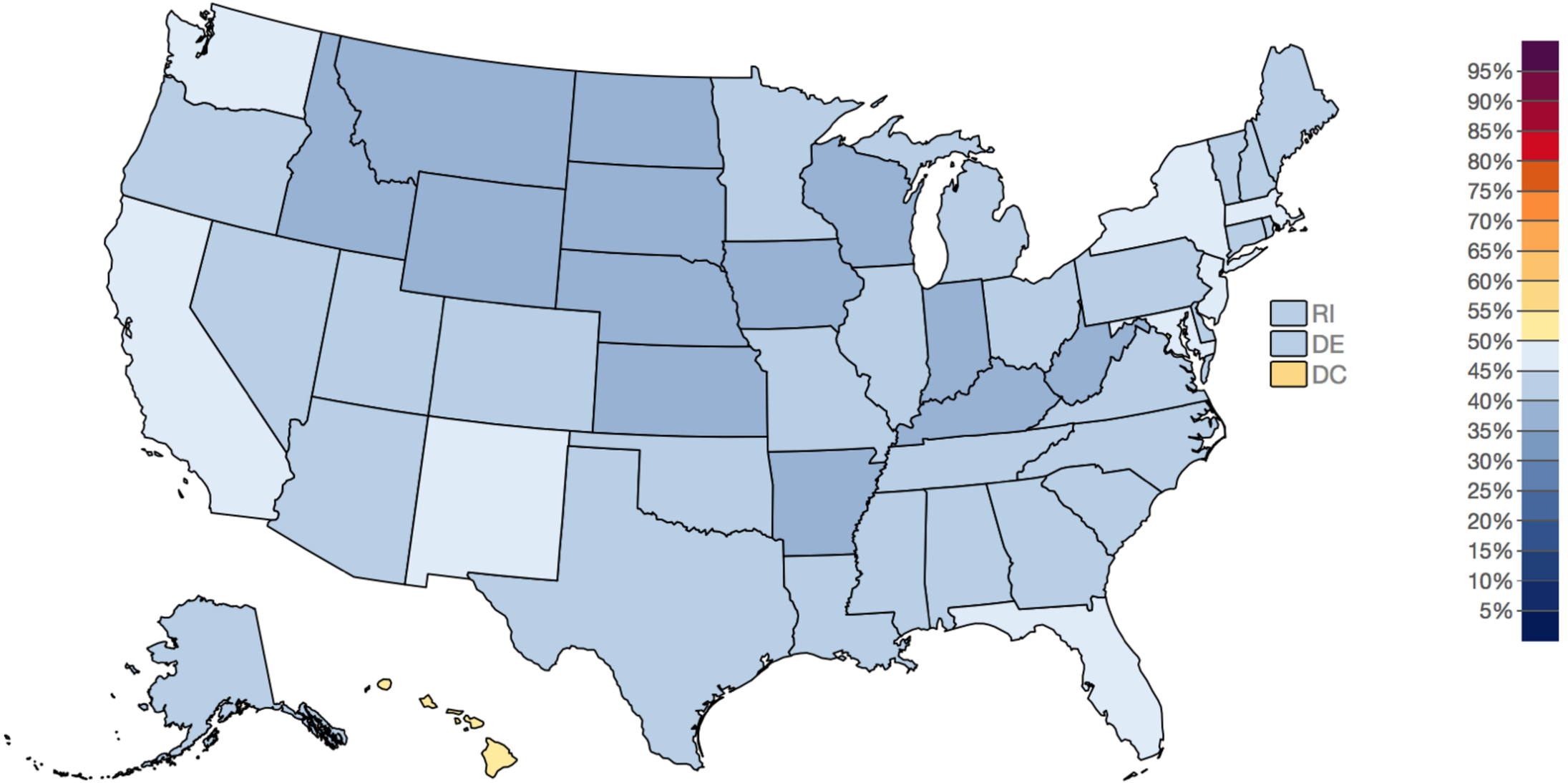


Maslow’s hierarchy of needs



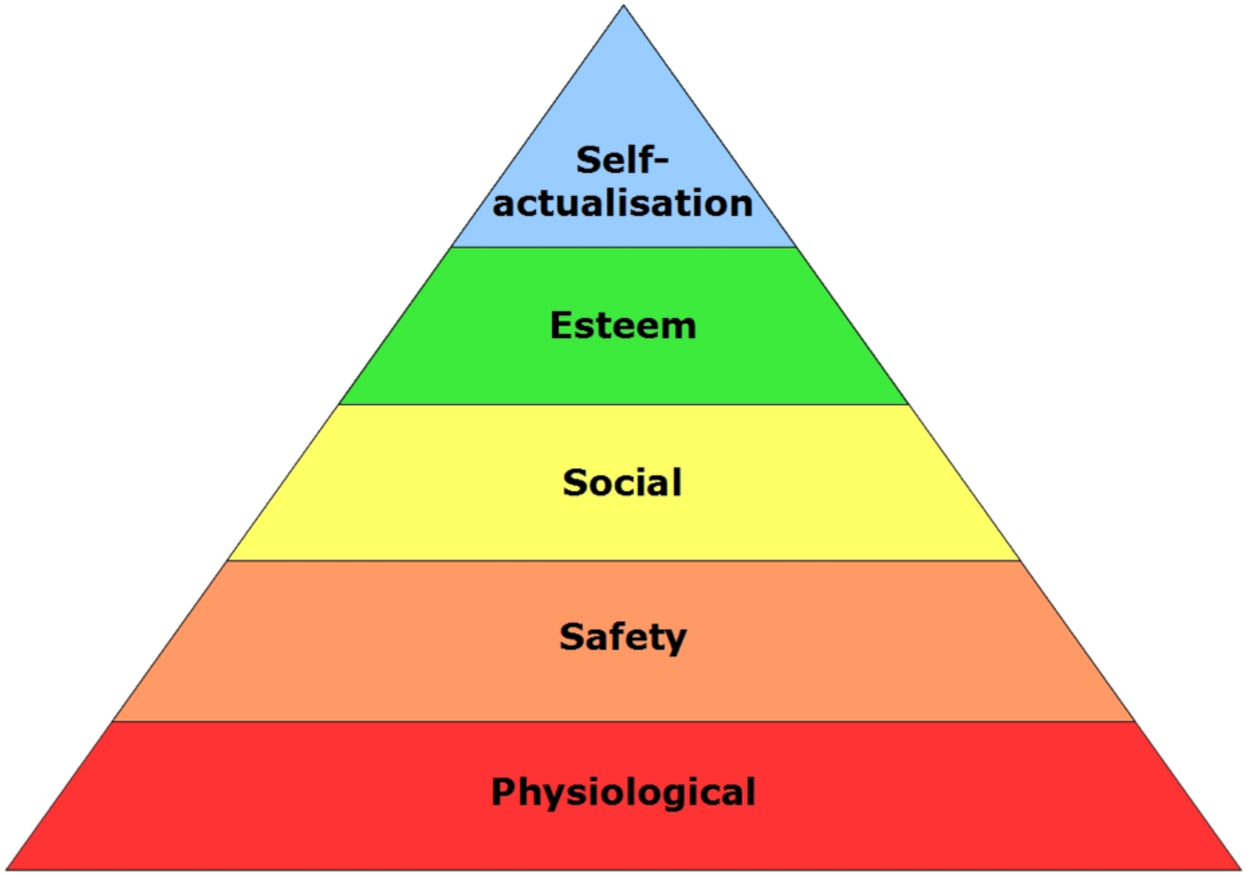
Maslow’s hierarchy of needs

% Adults who think global warming is already harming people in the US



http://environment.yale.edu/poe/v2014/

Howe et al. 2015



Where do climate change adaptation/mitigation fit in?

Climate change is not “available” for people to worry about.

People are hard-wired not to worry about climate change.

3 things social science teaches us about climate change and the American public

Illustration: Stephen Wilkes

1. People still lag behind scientists in climate change belief.

2. Lack of knowledge is not the (primary) problem

3. The human brain is hard-wired not to worry about climate change

General approaches to climate change communication

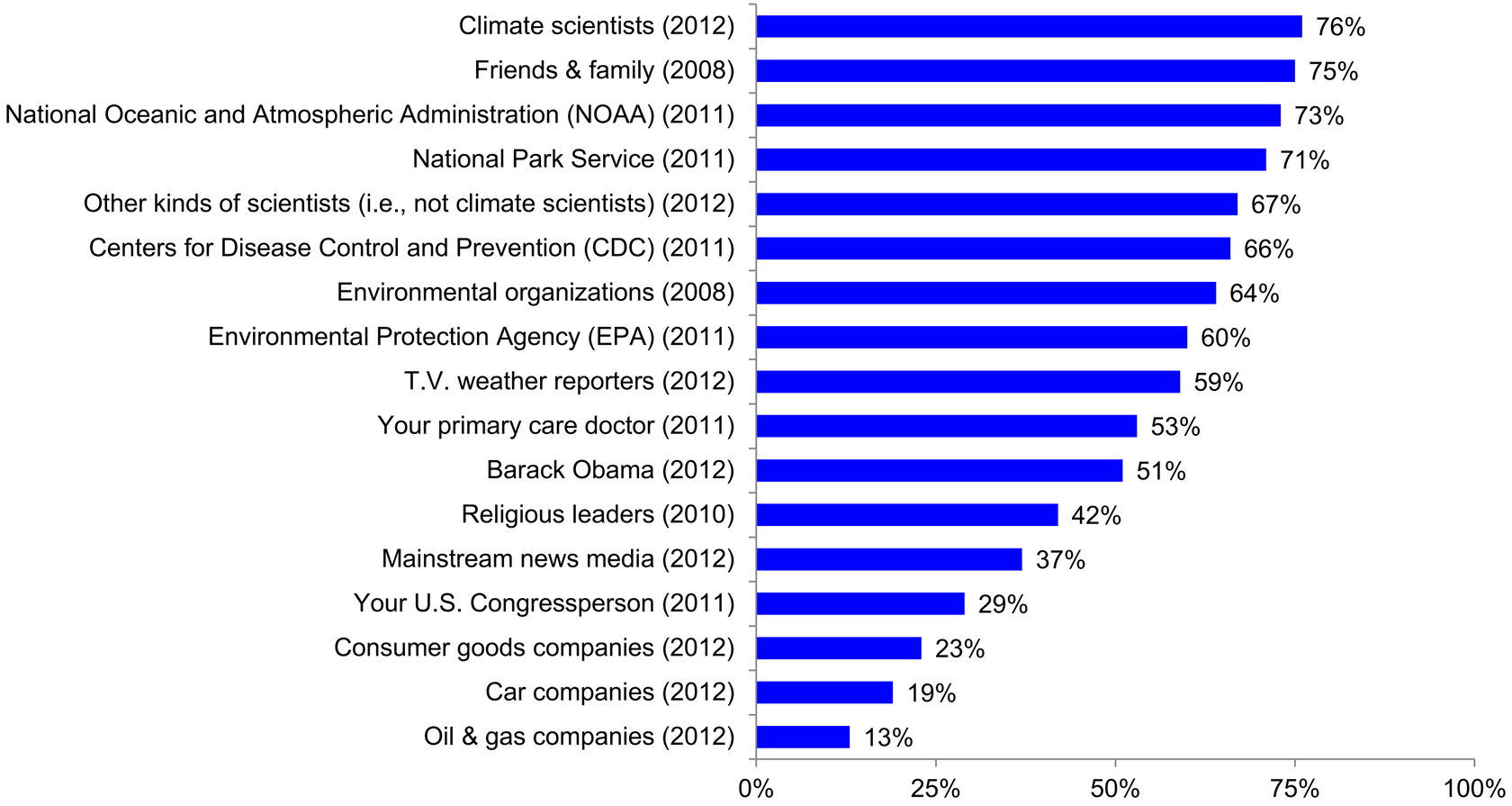
Photo: Pisu

First: should we be talking about this?

Photo: Black County Museums

Americans Trust Climate Scientists, Friends & Family Most As Sources Of Information About Global Warming

- % of Americans who strongly or somewhat trust -



How much do you trust or distrust the following as a source of information about global warming?

Base: Americans 18+.

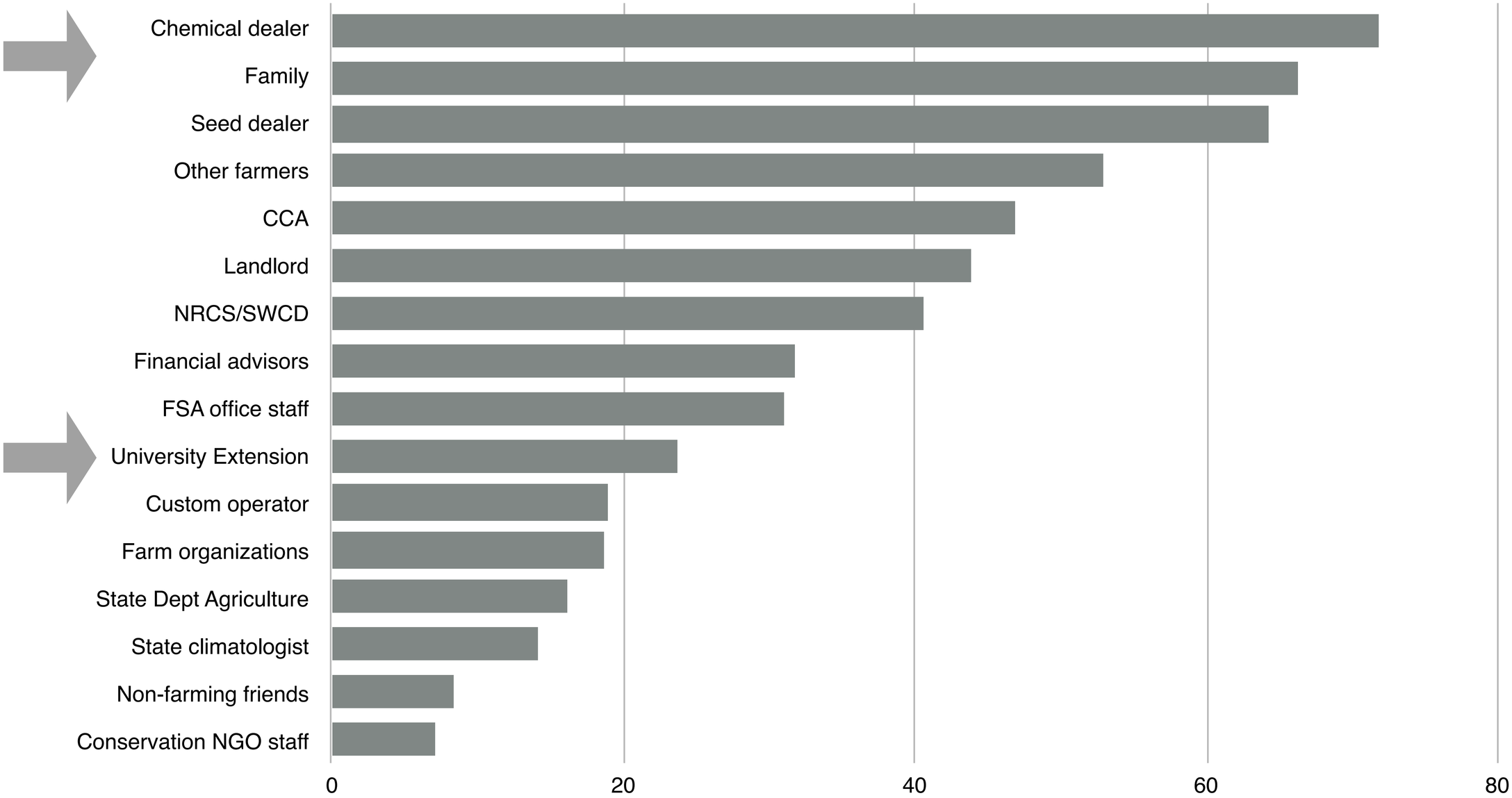
YALE PROJECT ON CLIMATE CHANGE COMMUNICATION
BRIDGING SCIENCE + SOCIETY

4C

George Mason University
Center for Climate Change Communication

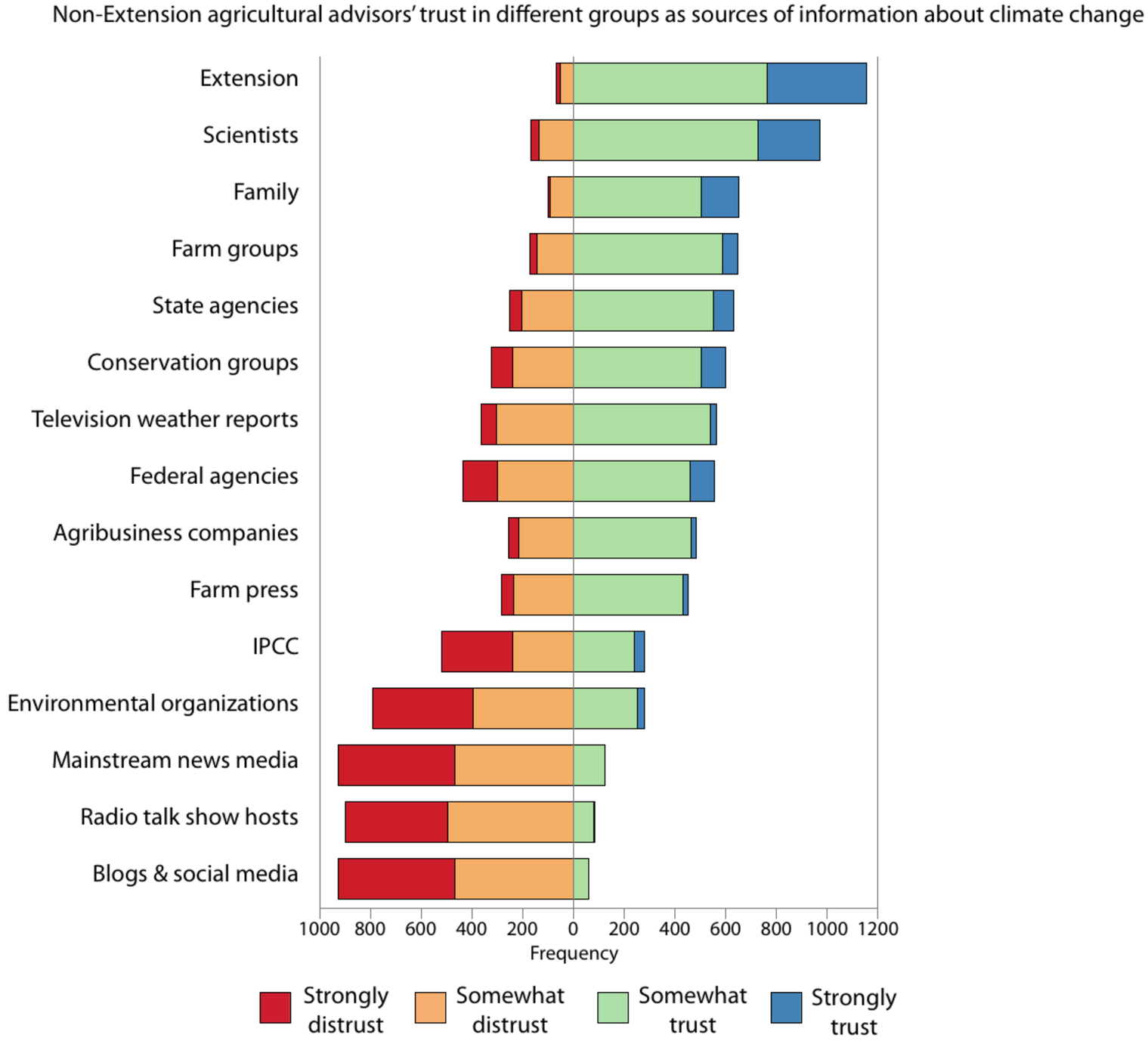
Every system is different…find the right audience

Farmers' trusted sources of information



Source: Prokopy et al., 2015

Farmers' *advisors* trusted sources of information



Source: Prokopy et al., 2015

Find an audience that trusts you.

Photo: Pisu

Shouting at each other

Photo: Paradigmshifter

Working together

Photo: Eric Isselee

A co-benefits approach

Photo: Eric Isselee

What is a co-benefits approach?

Photo: Eric Isselee

A co-benefits approach is finding a way of encouraging climate change adaptation by focusing on things that offer multiple, desirable benefits.

Why might a co-benefits approach work?

Carlton, JS & SK Jacobson. Using expert and nonexpert models of climate change to enhance communication. *Environmental Communication* (in press).

February 2014. Incomplete Draft. Please do not cite without permission.

Using expert and nonexpert models of climate change to enhance communication

J. Stuart Carlton
Department of Forestry & Natural Resources, Purdue University
carltons@purdue.edu

Susan K. Jacobson
Department of Wildlife Ecology and Conservation, The University of Florida

Climate change is a significant global risk that is predicted to be particularly devastating on coastal communities. Climate change adaptation and mitigation have been hindered by many factors, including psychological barriers, ineffective outreach and communication, and knowledge gaps. This qualitative study compares an expert model of climate change risks to county administrators' "mental" models of climate change and related coastal environmental hazards in Crystal River, Florida. There were 24 common nodes in the expert and the combined nonexpert models, most of which were related to hurricanes, property damage, and economic concerns. Seven nodes mentioned by nonexperts fit within, but were not a part of, the expert model, mainly related to ecological concerns about water quality. The findings suggest that climate outreach and communication can focus on compatible parts of the models, incorporating local concerns to find less controversial ways to discuss climate-related hazards.

INTRODUCTION

Climate change is a significant global risk that is predicted to be particularly devastating to coastal communities because of the effects of sea-level rise, coastal flooding, and increased storm activity. Climate change will likely erode shorelines, raise estuarine salinity (IPCC, 2007), and cause significant disruptions in marine fisheries (Cheung et al., 2009). Climate change might amplify other stresses to the coastal environment such as water pollution, habitat loss, and overuse of natural resources (Tobey, 2010).

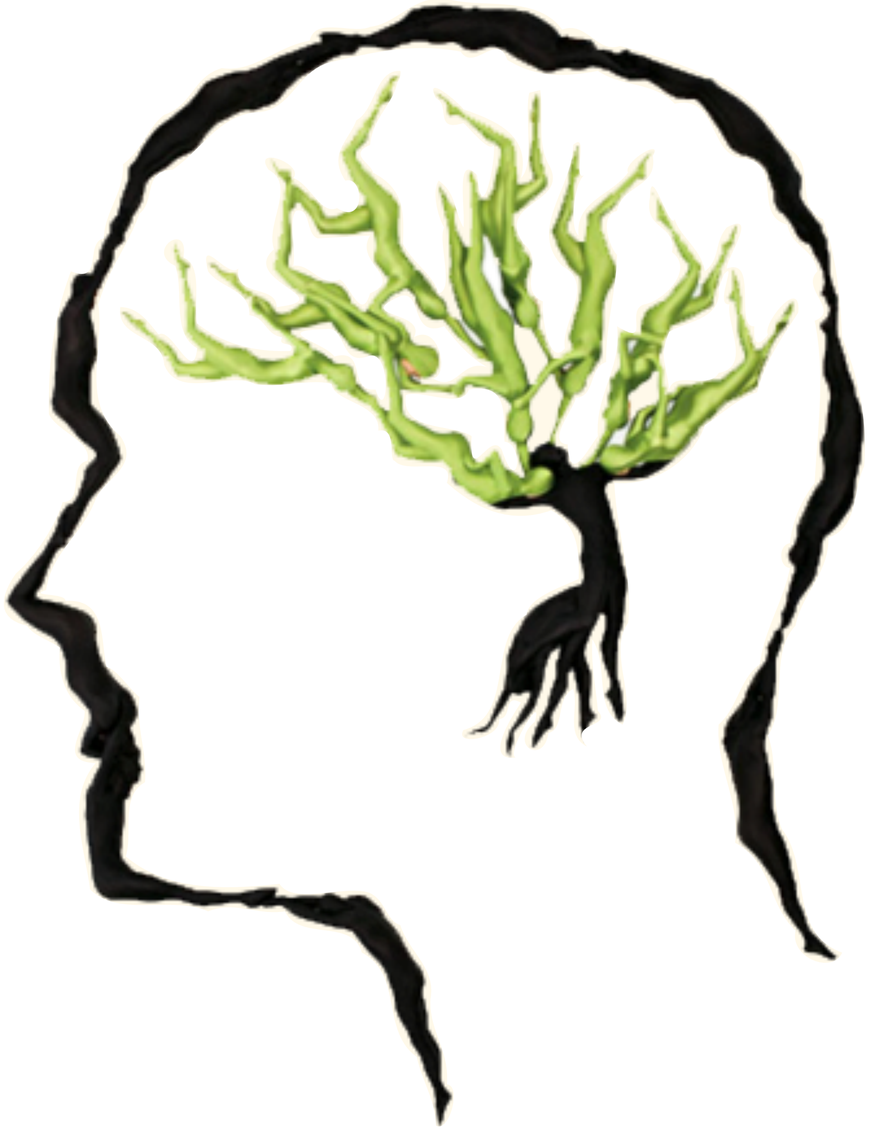

Nuclear Power Plant
Decent Restaurant
CR Wildlife Refuge
~2 miles
Crystal River, FL


Bill Froberg

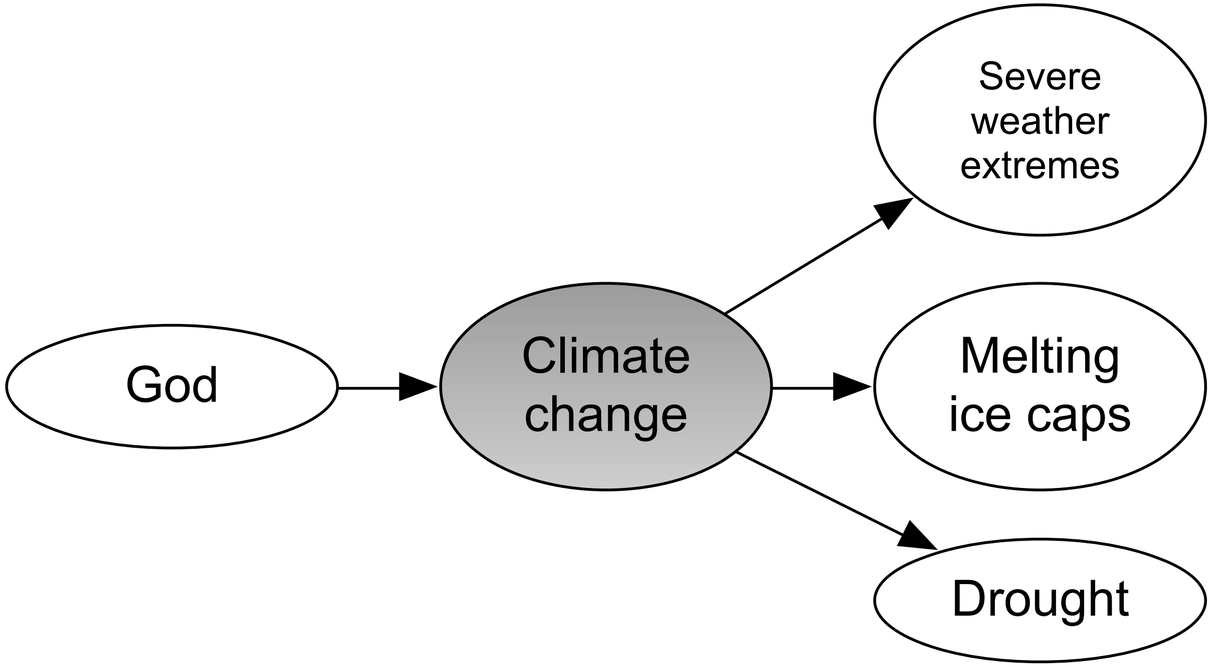
USFWS


Carvahlo@Flickr

Mental models

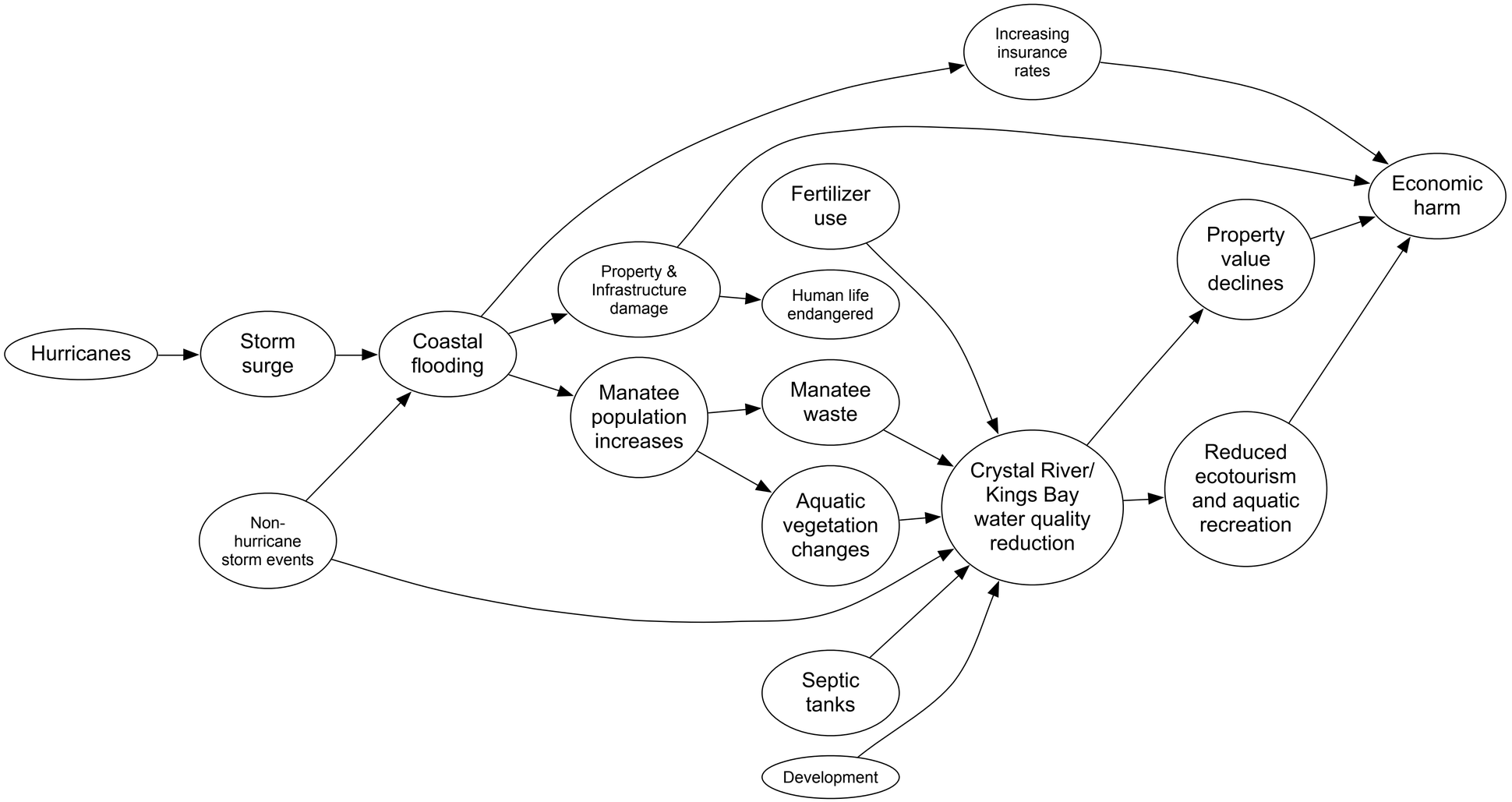


Policy maker model of climate change



Policy maker model of climate change

Policy maker model of King’s Bay water quality



Policy maker model of King's Bay water quality

“Win-Win” Climate Change Adaptation Strategies: Lessons Learned From Sea Grant Coastal Processes and Hazards Programming

By

Spencer Rogers, North Carolina Sea Grant
Jay Tanski, New York Sea Grant
Wendy Carey, Delaware Sea Grant

Contributing Authors

Clay McCoy, South Carolina Sea Grant
Greg Berman, Woods Hole Sea Grant
Jon Miller, New Jersey Sea Grant

UNC-SG-12-06
www.ncseagrant.org

Feb. 20, 2012

*"many coastal adaptation actions appropriate for long-term planning are identical to those employed to manage or mitigate severe and more immediate impacts of other coastal hazards. If Sea Grant is to effectively present adaption options, it should recognize that **the most convincing reasoning** to take specific actions should be given priority in extension efforts. Climate change and sea- level rise will usually be on the list of justifications but **are often less compelling threats** than other appropriately presented coastal hazards."*

Jay Tanski, New York Sea Grant
Wendy Carey, Delaware Sea Grant

Contributing Authors

Clay McCoy, South Carolina Sea Grant
Greg Berman, Woods Hole Sea Grant
Jon Miller, New Jersey Sea Grant

UNC-SG-12-06
www.ncseagrant.org

Feb. 20, 2012

Sea Grant photo library

Sea-level rise, storm resilience, or insurance savings?


CLIMATE
SUMMIT
WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?
• ENERGY INDEPENDENCE
• PRESERVE RAINFORESTS
• SUSTAINABILITY
• GREEN JOBS
• LIVABLE CITIES
• RENEWABLES
• CLEAN WATER, AIR
• HEALTHY CHILDREN
• ETC. ETC.
JOEL PETT
12/7/19 USATODAY

The power of interest

The power of leverage

A co-benefits approach can help you hit your target.

(or at least not miss)

Values, ideologies, and the climate controversy: Lessons for communicating climate change

Contact: stuartcarlton@tamu.edu

Sea Grant
Texas
AT TEXAS A&M UNIVERSITY
TexasSeaGrant.org