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George Mason University
Center for Climate Change Communication

Engaging the public in earth sciences: Five guiding principles

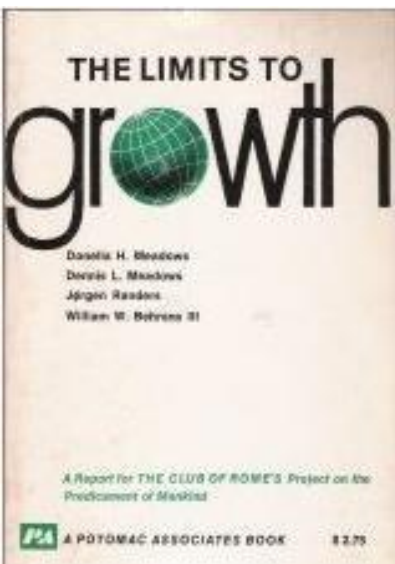
ESIP Federation Annual Meeting

January 5th, 2012

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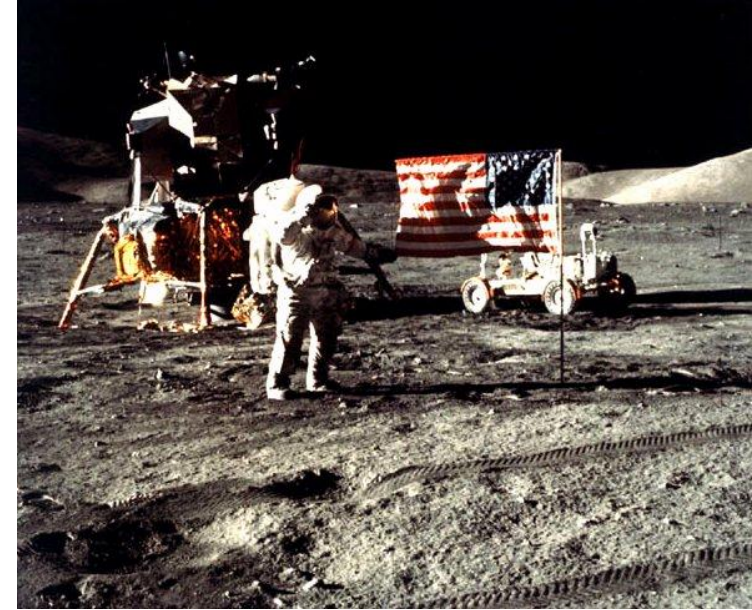
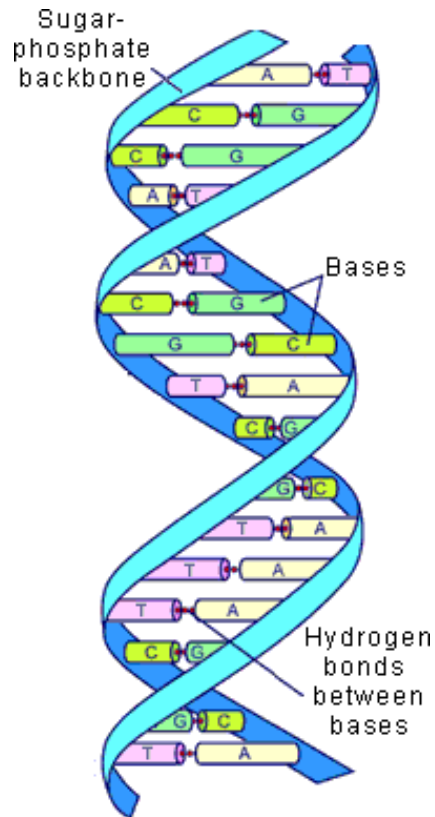
First video game released



Club of Rome
Issues warning

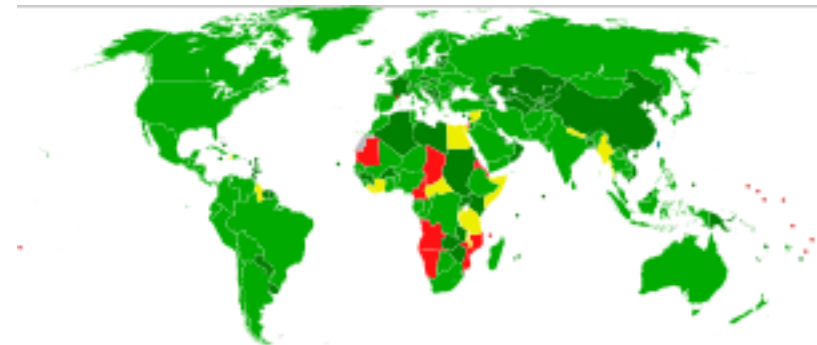
1972

First
recombinant DNA



Last man on the moon

First biological weapons treaty

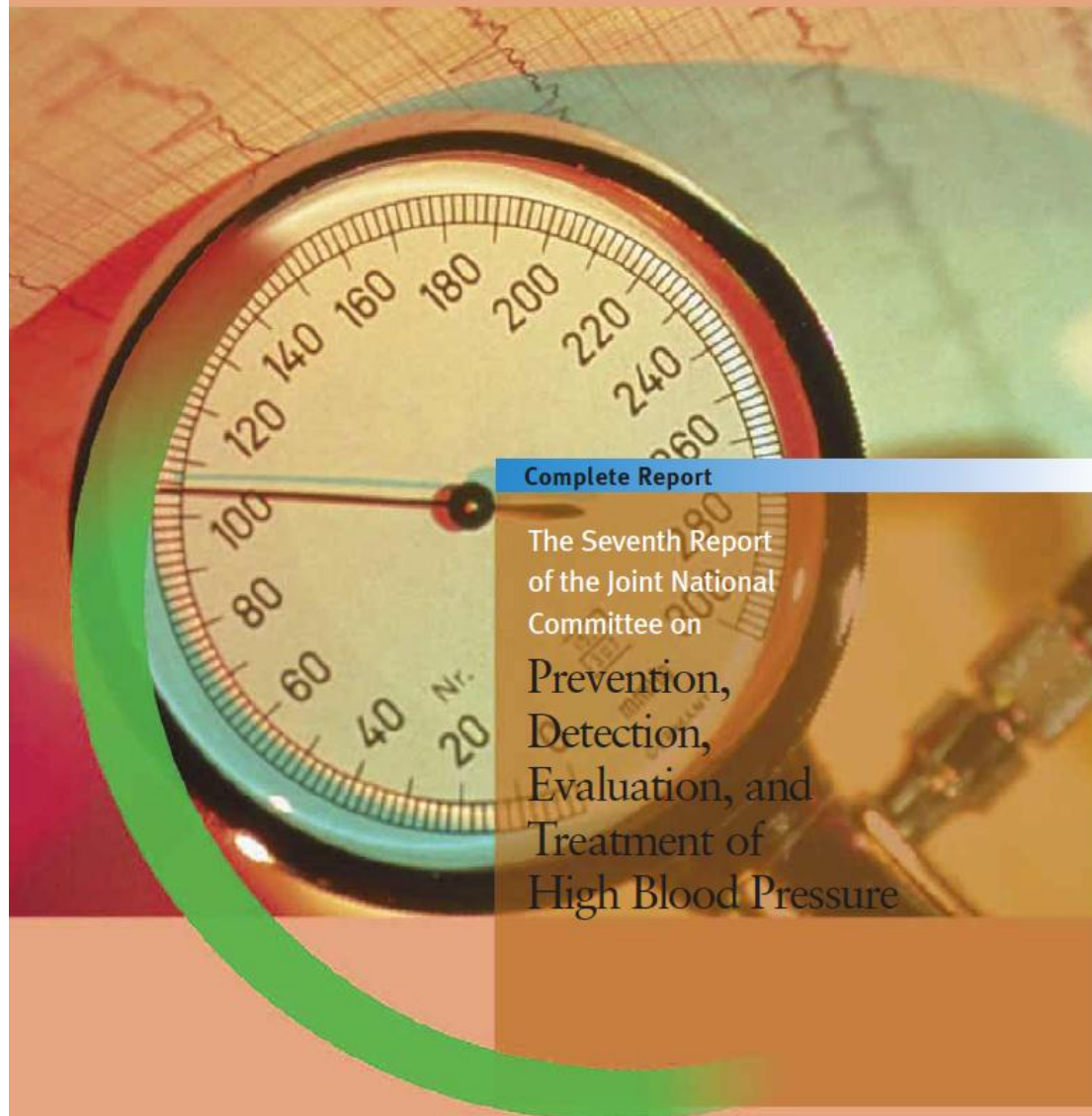


Participation in the Biological Weapons Convention

- Signed and ratified
- Only signed
- Non-signatory
- Unrecognized state, abiding by treaty



**National Heart
Lung and Blood Institute**



Complete Report

The Seventh Report
of the Joint National
Committee on
Prevention,
Detection,
Evaluation, and
Treatment of
High Blood Pressure



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health
National Heart, Lung, and Blood Institute



NHBPEP:

- Public education
- Public screenings
- Patient education
- Surveillance

110/70
170/110
160/105
150/100
140/95
120/80
115/75
110/70

KEEP IT DOWN

Your blood pressure, that is. High Blood Pressure is a leading risk factor for heart disease and stroke. Yet many people don't even know they have it. Managing your **BLOOD PRESSURE** is key, including having it checked regularly and following the **DASH** diet. Take the first step today. Go to the Heart&Stroke Blood Pressure Action Plan at heartandstroke.ca/bp.

TAKE THE BLOOD PRESSURE ACTION PLAN



- Standardizing definitions
- Professional education
- Coalition building

Treatment R&D

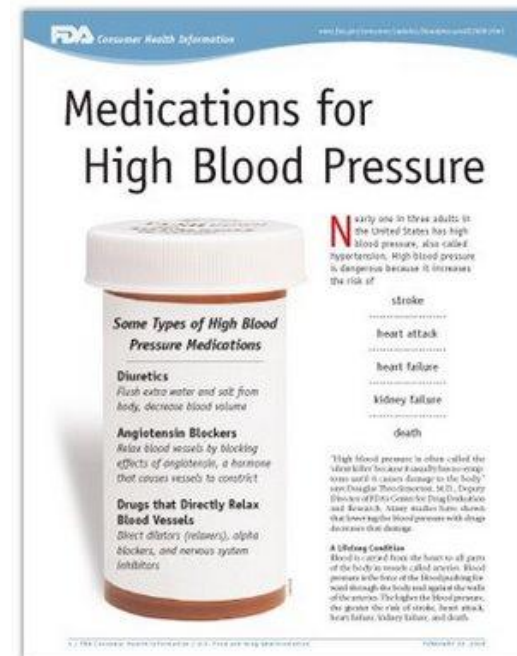


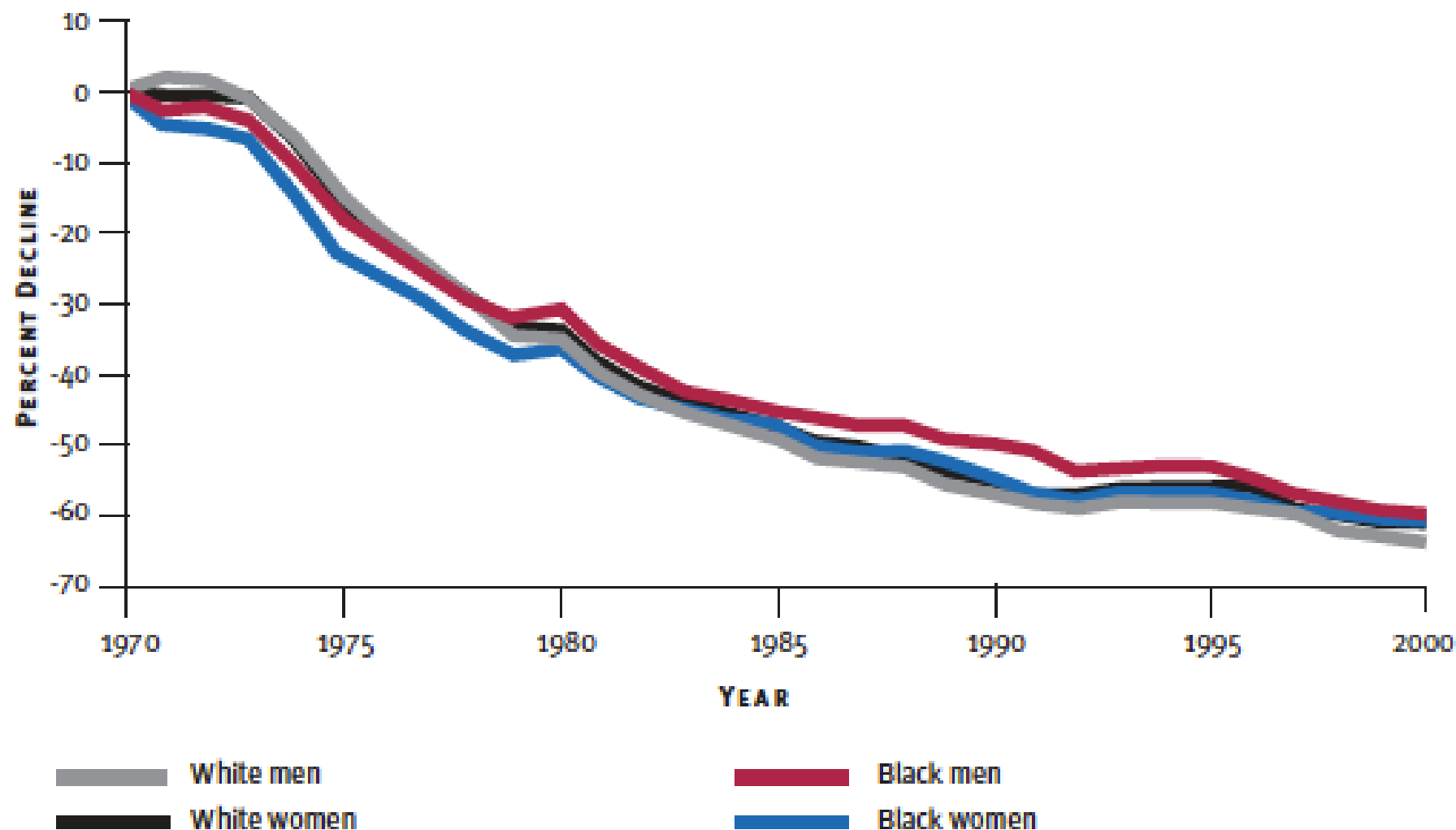
Table 1. Trends in awareness, treatment, and control of high blood pressure, 1976–2000*

	NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY, PERCENT			
	1976–80 ¹	1988–91 ¹	1991–94 ²	1999–2000 ³
Awareness	51	73	68	70
Treatment	31	55	54	59
Control [†]	10	29	27	34

* Percentage of adults ages 18 to 74 years with SBP of 140 mmHg or greater, DBP of 90 mmHg or greater, or taking antihypertensive medication.

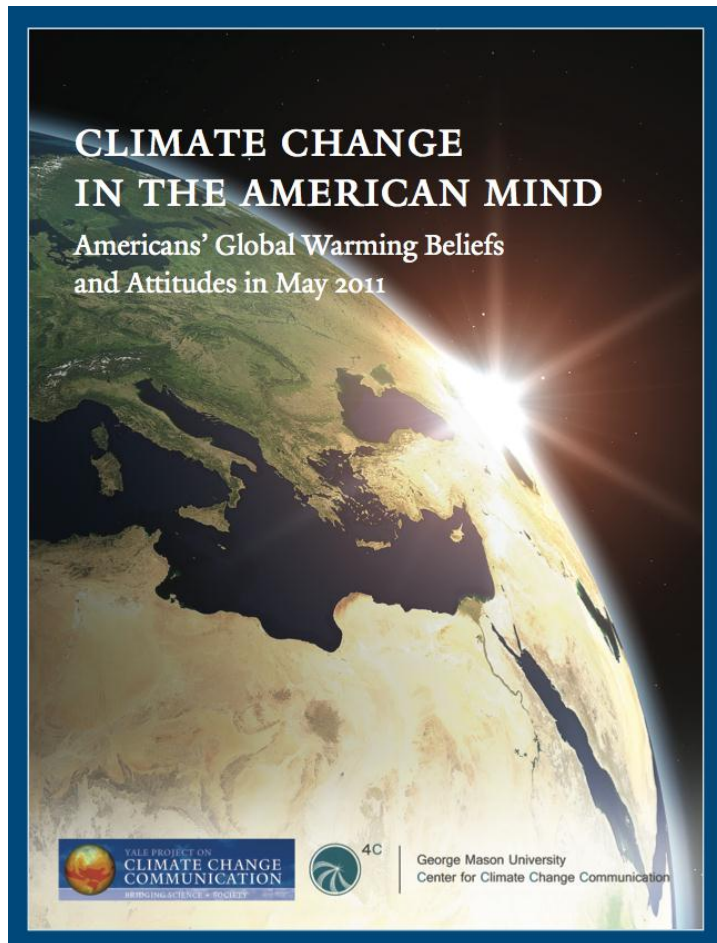
† SBP below 140 mmHg and DBP below 90 mmHg, and on antihypertensive medication.

Figure 2. Percent decline in age-adjusted mortality rates for stroke by gender and race: United States, 1970–2000



Source: Prepared by Thom T, National Heart, Lung, and Blood Institute from Vital Statistics of the United States, National Center for Health Statistics. Death rates are age-adjusted to the 2000 U.S. census population.

Selected results from a Yale/George Mason climate change communication research collaboration



Yale: Anthony Leiserowitz, Nick Smith & Jay Hmielowski

George Mason: Connie Roser-Renouf, Karen Akerlof, Justin Rolfe-Redding & Teresa Myers

#1. Trust is your most important asset

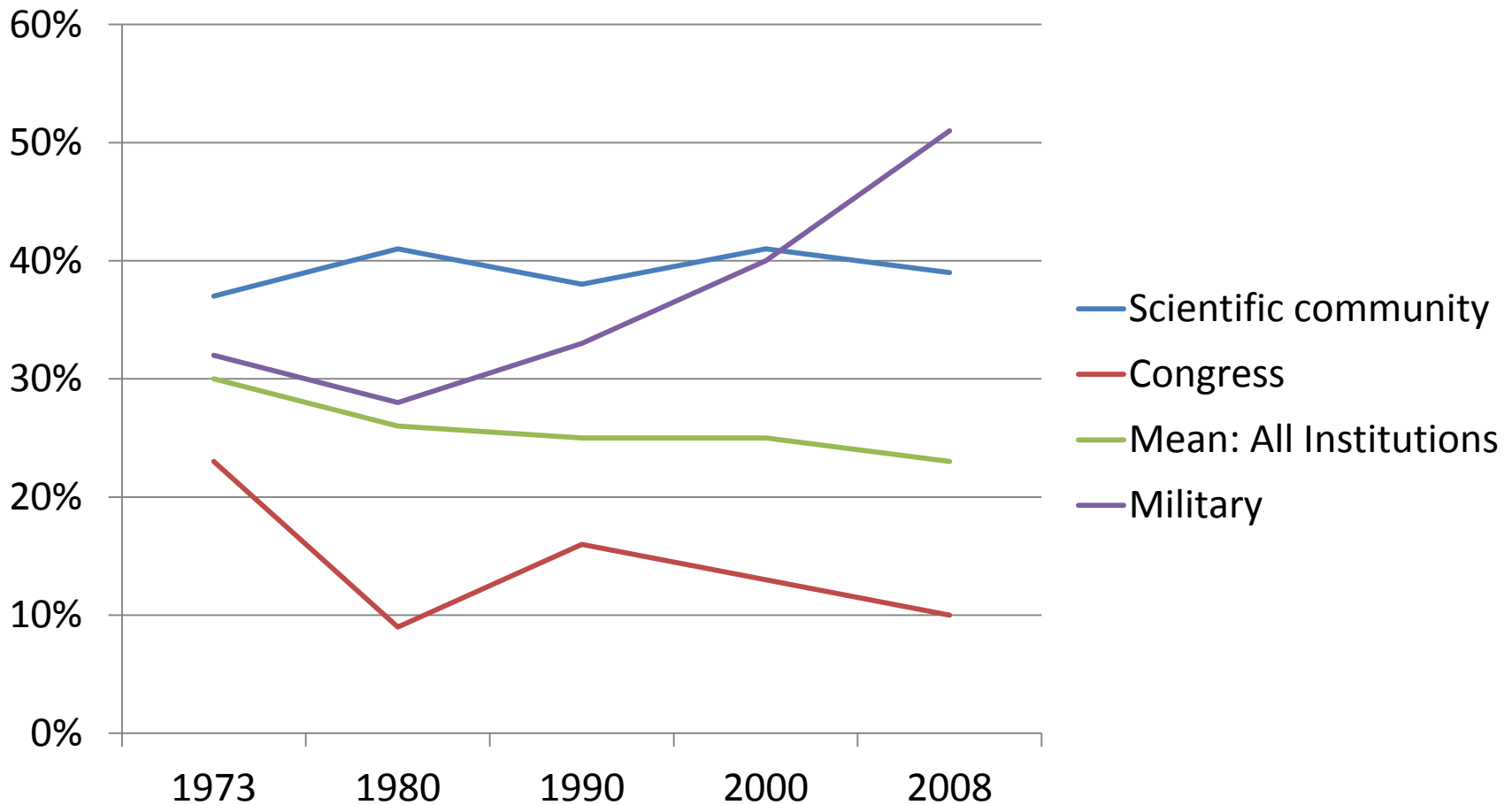
Effective communication
can only occur when there is trust.

Public trust in most American
institutions is at an all-time low,
although trust in scientists remains high.



Confidence in People Running Various Institutions

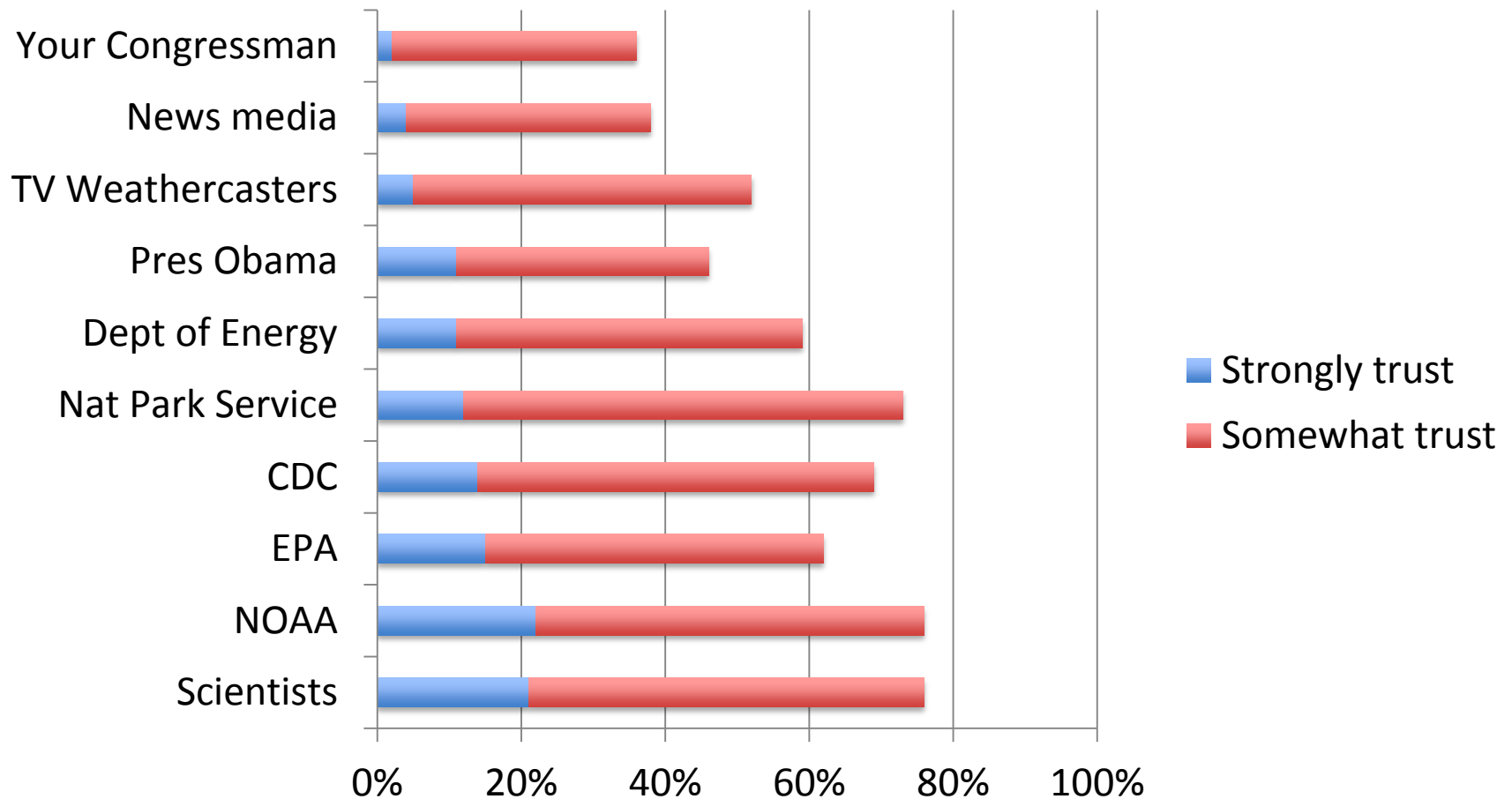
(“A great deal of confidence”)



Source: General Social Science Survey, NORC, University of Chicago.

Trust in Sources of Information about Climate Change:

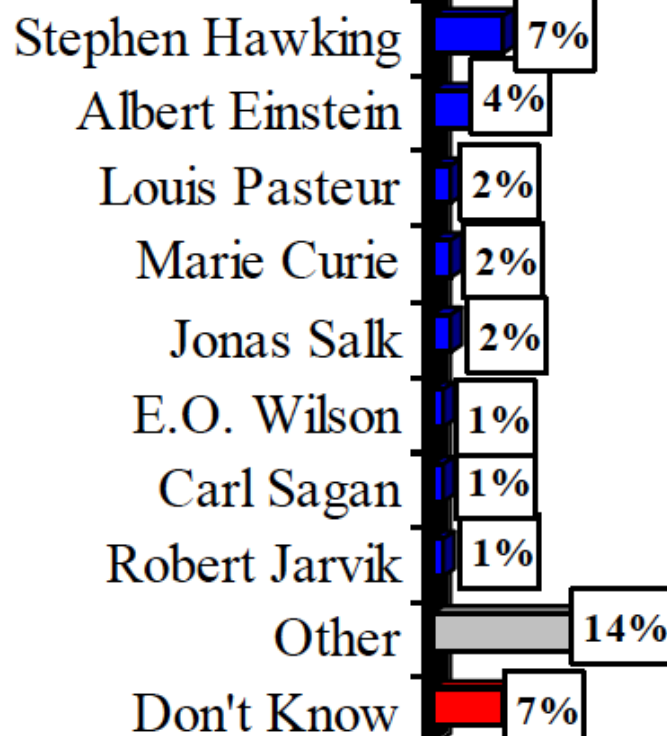
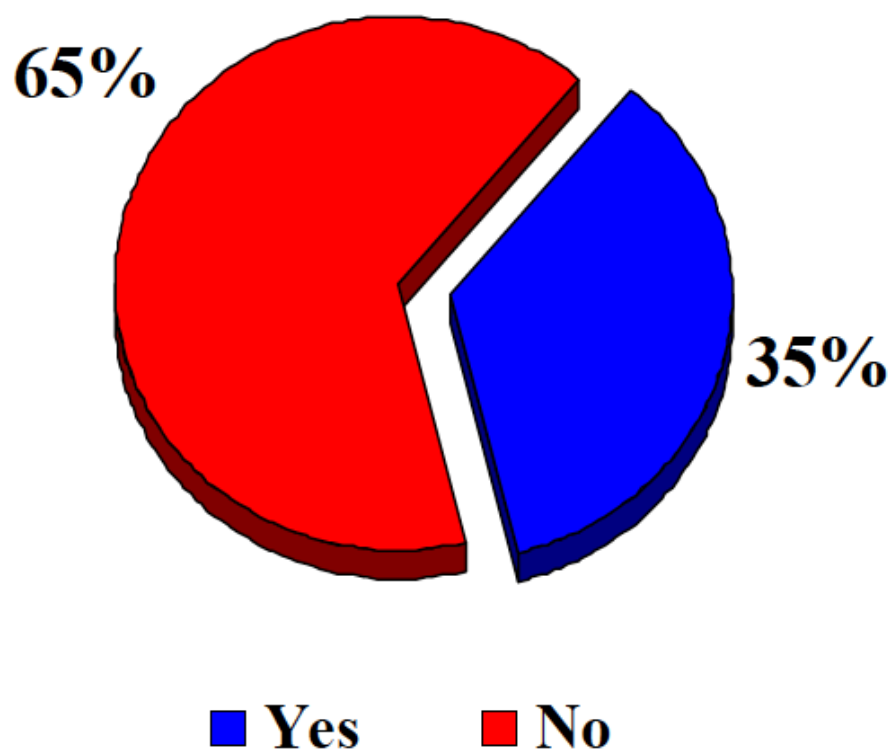
General Public



Source: Leiserowitz A, Maibach E, Roser-Renouf, C & Smith N. (2011) *Climate change in the American Mind: Americans' global warming beliefs and attitudes in May 2011.*

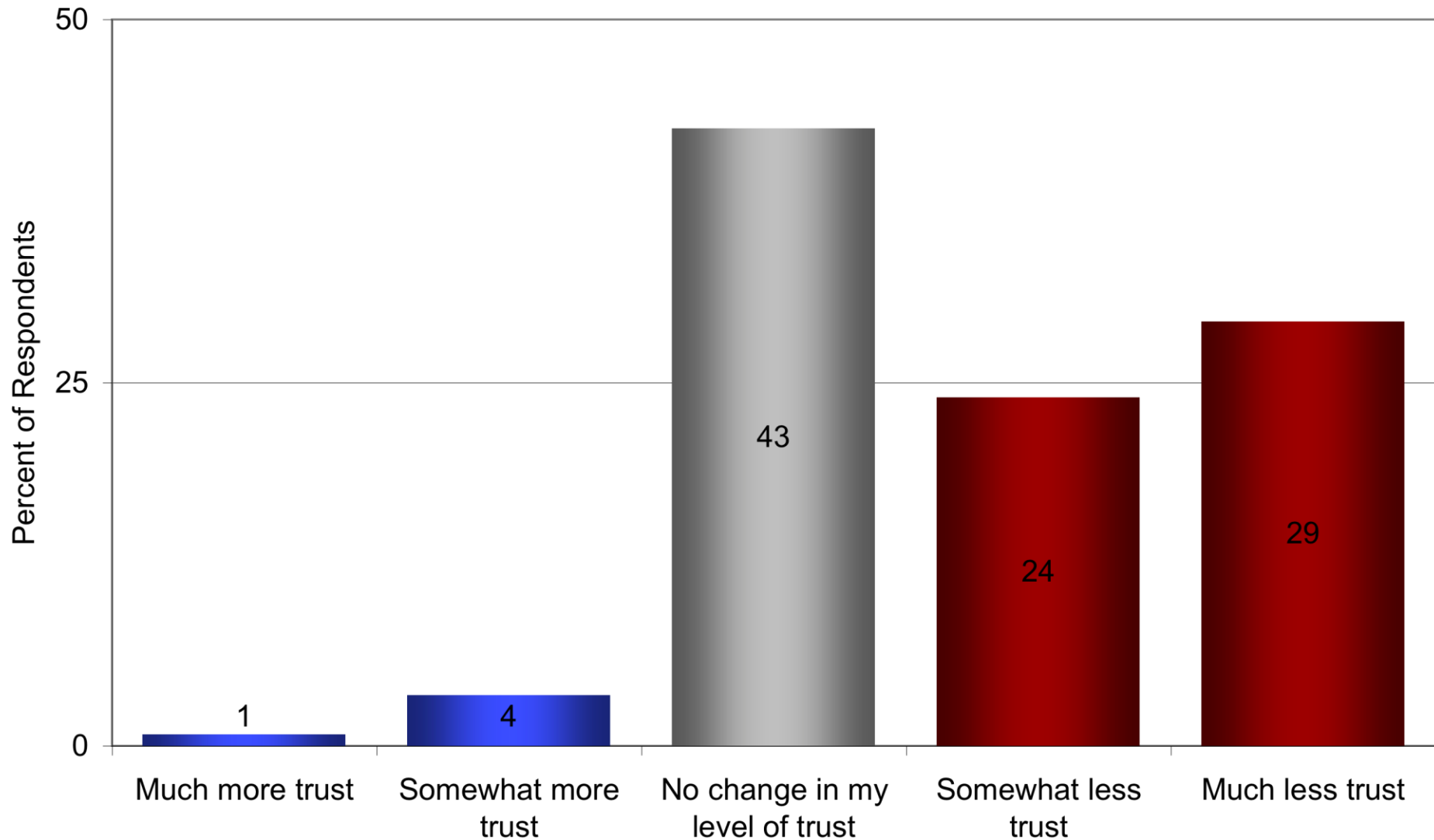
Most Americans Can't Name A Living Scientist

Can you name a living scientist? (total mentions $n=278$)



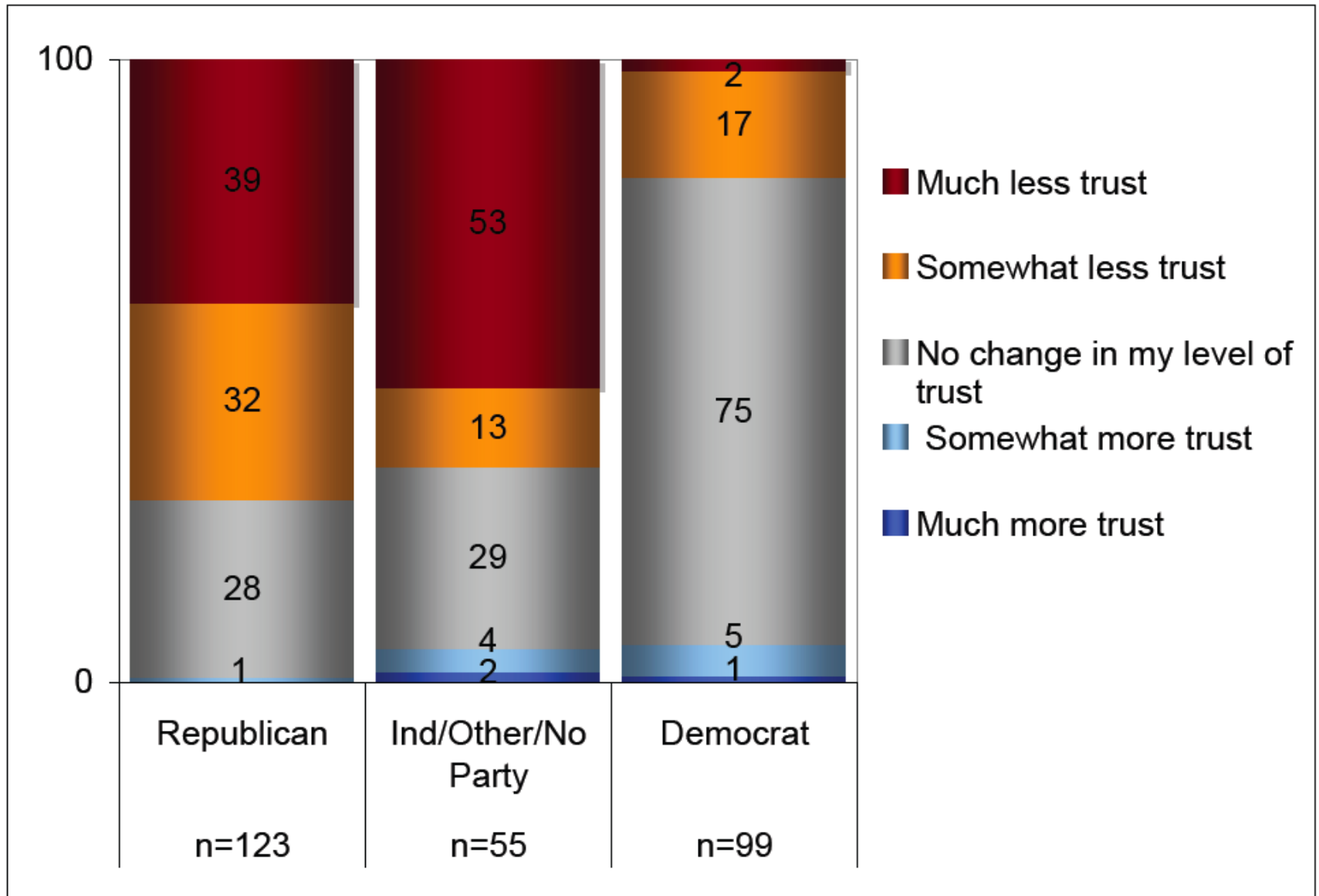


Impact of Climategate on Trust in Scientists



Source: Leiserowitz et al (in press) Climategate, public opinion & the loss of trust. Amer. Behavioral Scientist.

The loss of trust is highly associated with political ideology



Source: Leiserowitz et al (in press) Climategate, public opinion & the loss of trust. Amer. Behavioral Scientist.

BAMS, January 2011

“CLIMATEGATE” UNDERMINED BELIEF IN GLOBAL WARMING AMONG MANY AMERICAN TV METEOROLOGISTS

BY EDWARD MAIBACH, JAMES WITTE, AND KRISTOPHER WILSON

“Climategate”—the unauthorized release of, and news stories about, e-mails between climate scientists in the United States and United Kingdom—undermined belief in global warming and possibly also trust in climate scientists among TV meteorologists in the United States.

Factors that predict Republicans' belief in climate change

- In descending order, they are:
 - **Perceived scientific consensus (B=.35; p<.001)**
 - **Trust in scientists (B=.17; p<.001)**
 - Individualistic worldview (B= -.13; p<.001)
 - Individual efficacy (B=.12; p<.001)
 - Information satisfaction (B= -.10; p<.001)
 - Religiosity (B= -.10; p<.001)
 - Lesser factors (conservatism, time, involvement, social network)
- $R^2 = 0.47$

Pop quiz:

Who is Canada's most trusted person?



The long-time host of "The Nature of Things" and Chair of the [David Suzuki Foundation](#), this eco champion has reached out to millions all across the globe, telling people about the danger the environment faces and we can make a differences with small changes.

Honest, compassionate, and communicating a clear message, it's easy to see why Canadians voted him the Most Trusted for the third year in a row.

“He knows how to reach out and explain things so the common man understands,” says 59-year-old respondent Jacqueline Fitzpatrick of Thunder Bay, summarizing the general take on her No. 1 pick.



What's going on here?

Familiarity → Liking

Liking → Trust

QED: Familiarity → Trust



David is familiar, liked and trusted.

Only one of these scientists suffered a loss of trust as a result of “Climategate.”



Implication: It's worth your effort to become familiar, liked & trusted by the people with whom you would like to share your expertise



#2: The less you say, the more you're heard.

Therefore:

- Identify the few most important things you wish to say.
- Find ways to make those points simply and concretely.
- Repeat your key points often.
- Encourage others in your community to make those key points as well.
- Make it easy for the people you are trying to engage to repeat these points to other people.

The formula for effective public communication:

“Simple clear messages, repeated often, by a variety of trusted sources.”

#3: The decision about what to say can - and should - be aided by audience research.

- What to say is determined by the needs of your audience, not by what you are most eager to say.
- Use audience research to identify:
 - Which facts (5 max) about {your issue here}, once understood, make the biggest difference in helping audience members grasp the current state of the science?
 - Which misperceptions (3 max) are the biggest impediment to audience members' understanding of the current state of the science?

A myth that matters:

“There’s a lot of disagreement among scientists about global warming”

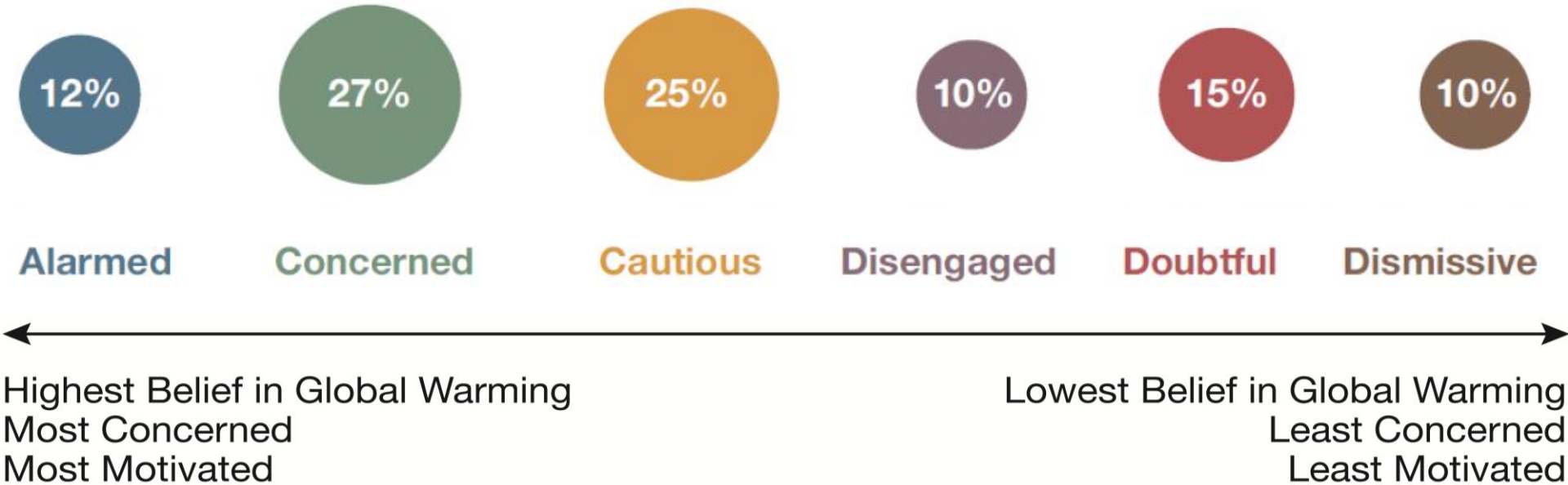


In May 2011:

- Only 39% of American adults believed “Most scientists think global warming is happening”
- And only 13% believed “81-100% of climate scientists think global warming is happening.”

#4: There is no such thing as “the public.”

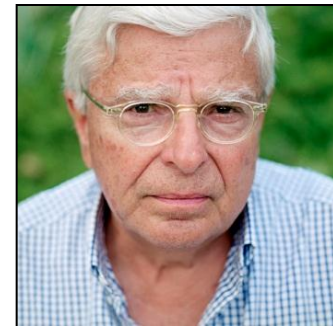
Example: Global Warming’s Six Americas



Global Warming's "Six Americas"

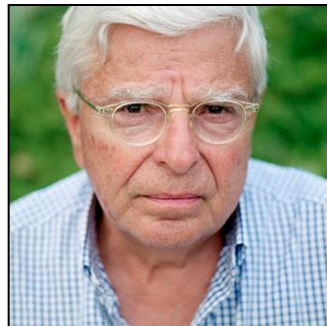
They *think* differently, but they don't *look* different...

- The groups don't differ much on the basis of sex, race, age or income – there are men and women of every age, race and income in each of the six groups.
- But they differ dramatically in their beliefs about the reality, causes and dangers of global warming, in the political ideology, and in their underlying worldviews.

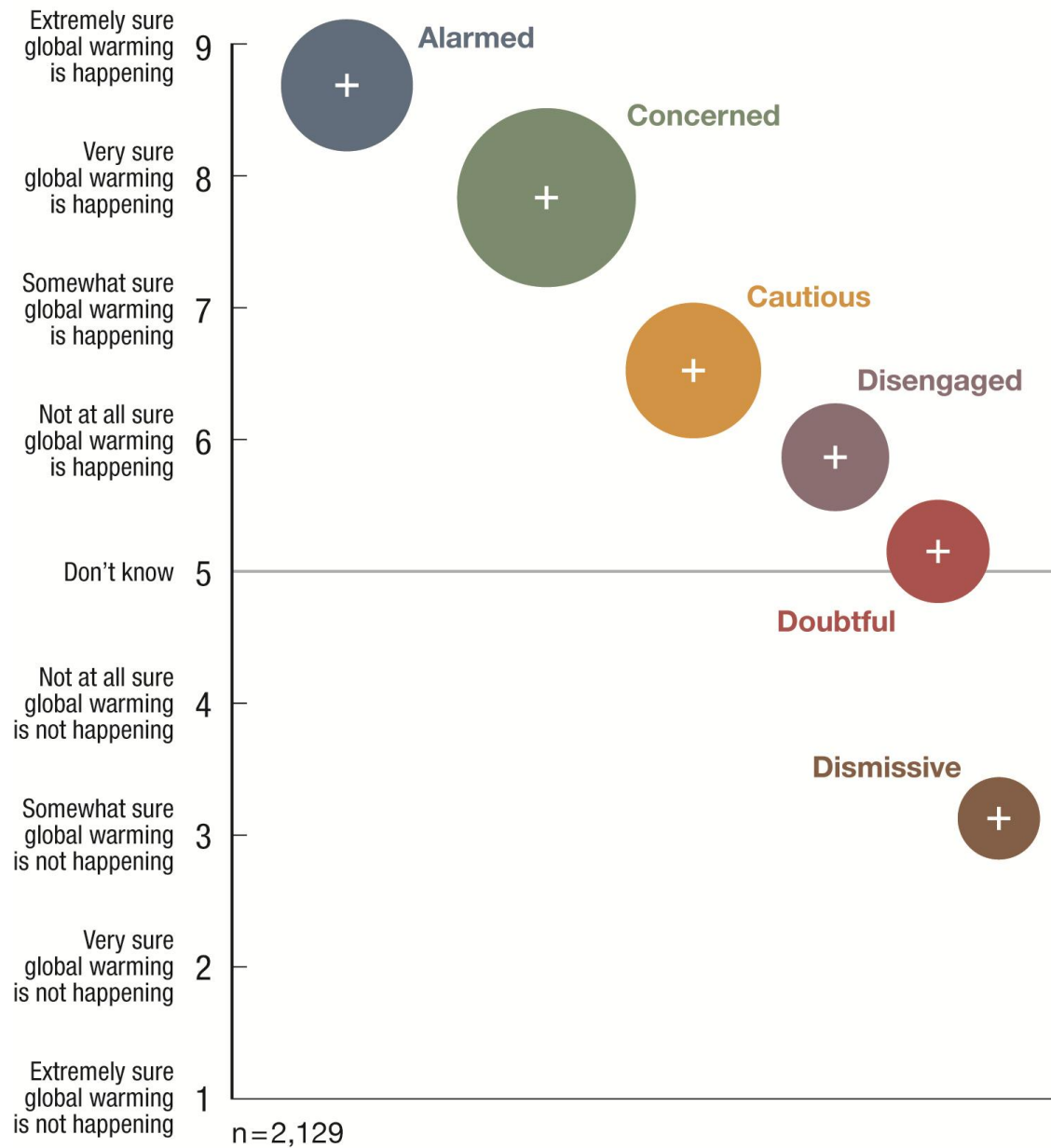


A quick profile of selected *key beliefs* about global warming that influence global warming policy support.

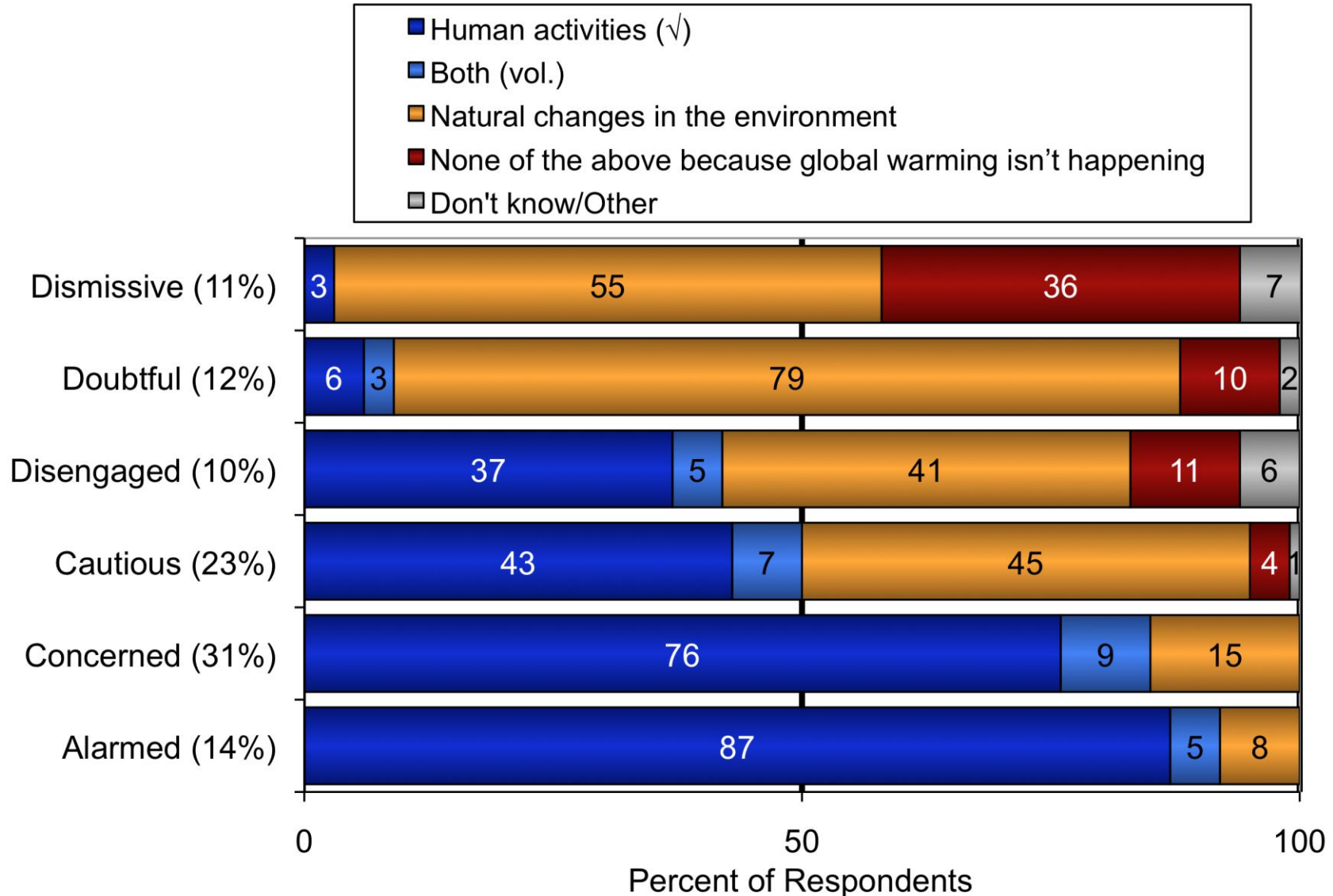
- *Global warming/climate change is real.*
- *People are causing it.*
- *It is or will be harmful to people.*
- *People can limit it – it's a solvable problem.*
- *Nearly all of the experts agree*



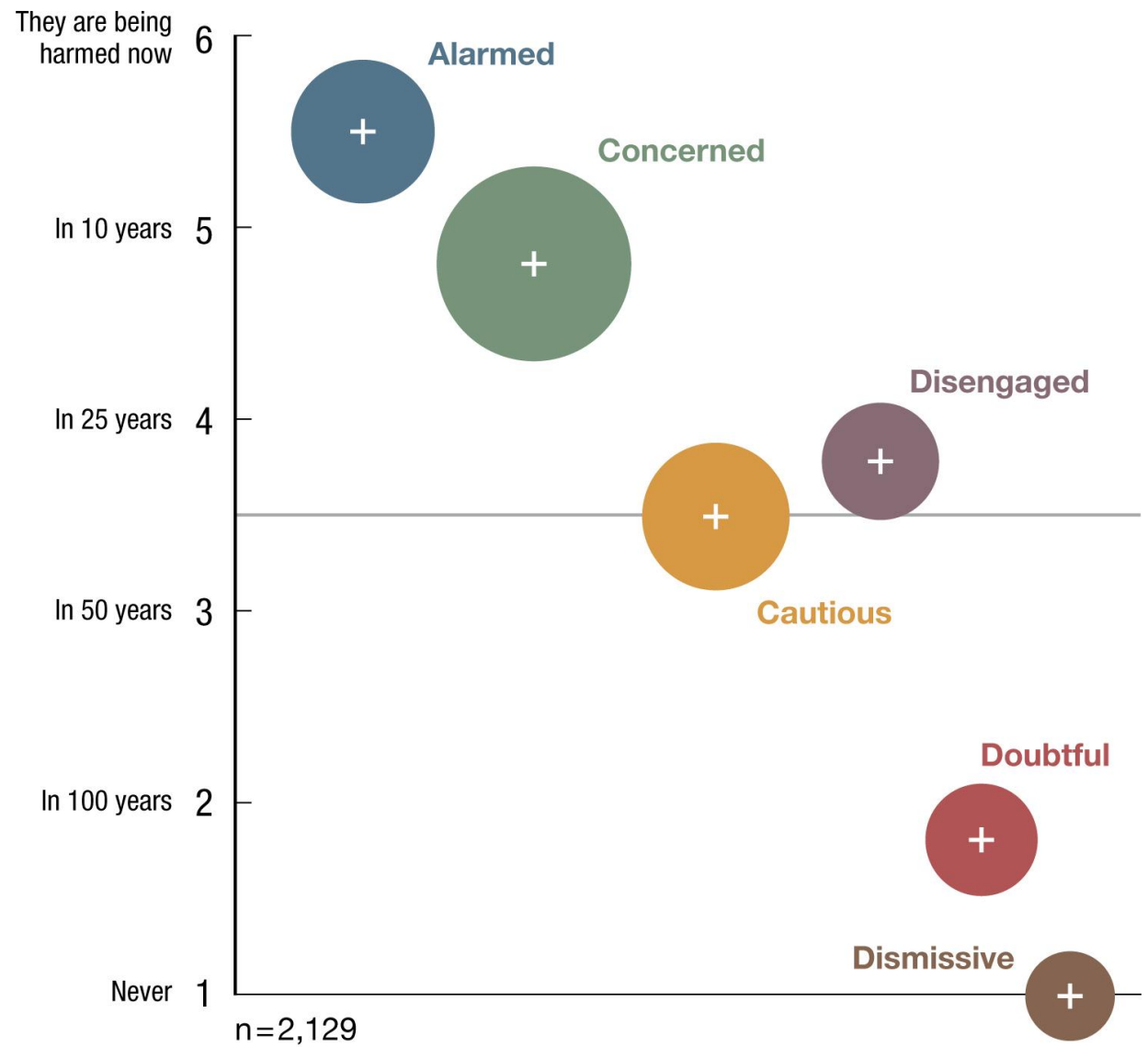
Do you think global warming is happening? How certain are you?



What's causing global warming?

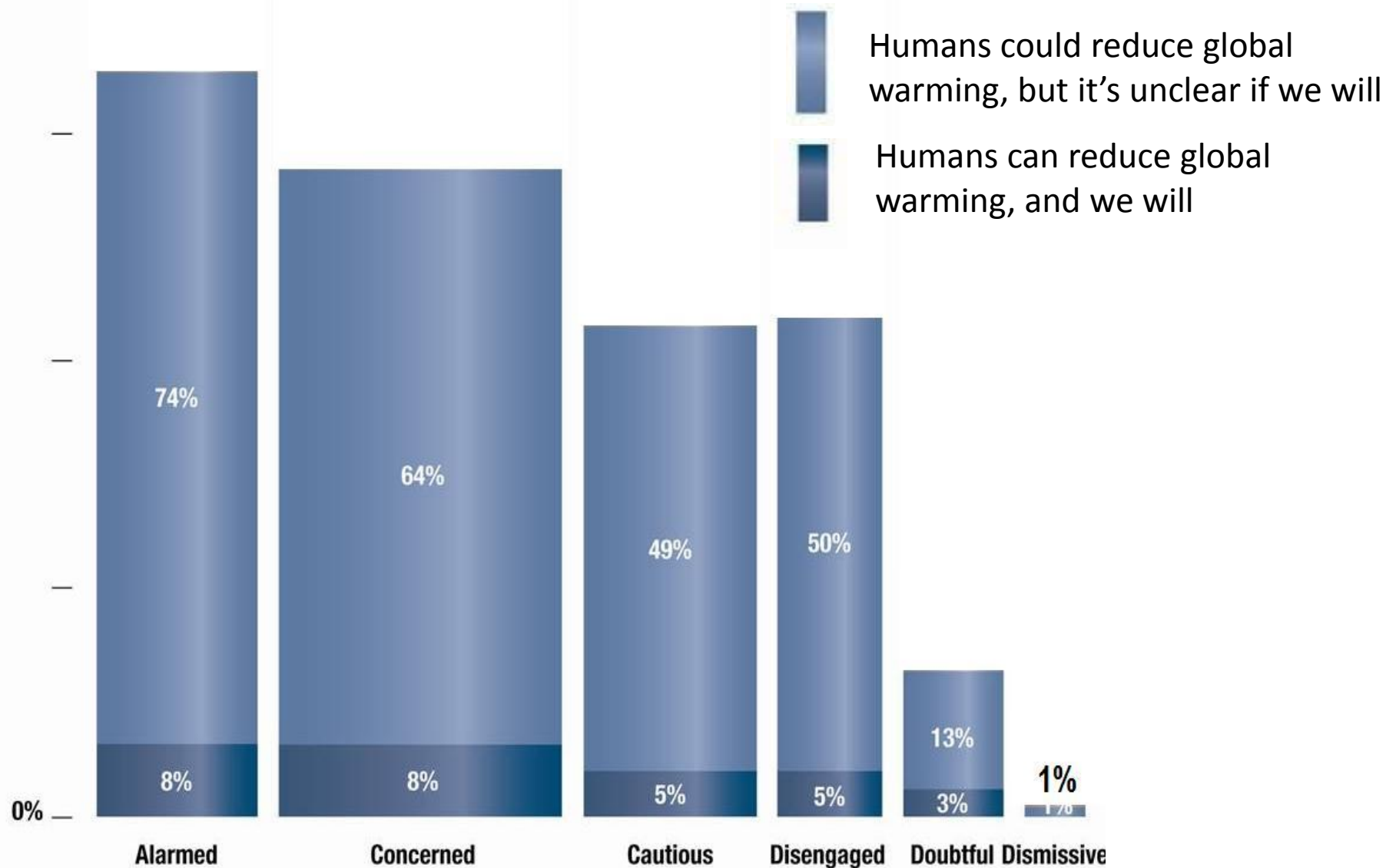


When do you think global warming will start to harm people in the U.S.?



100% —

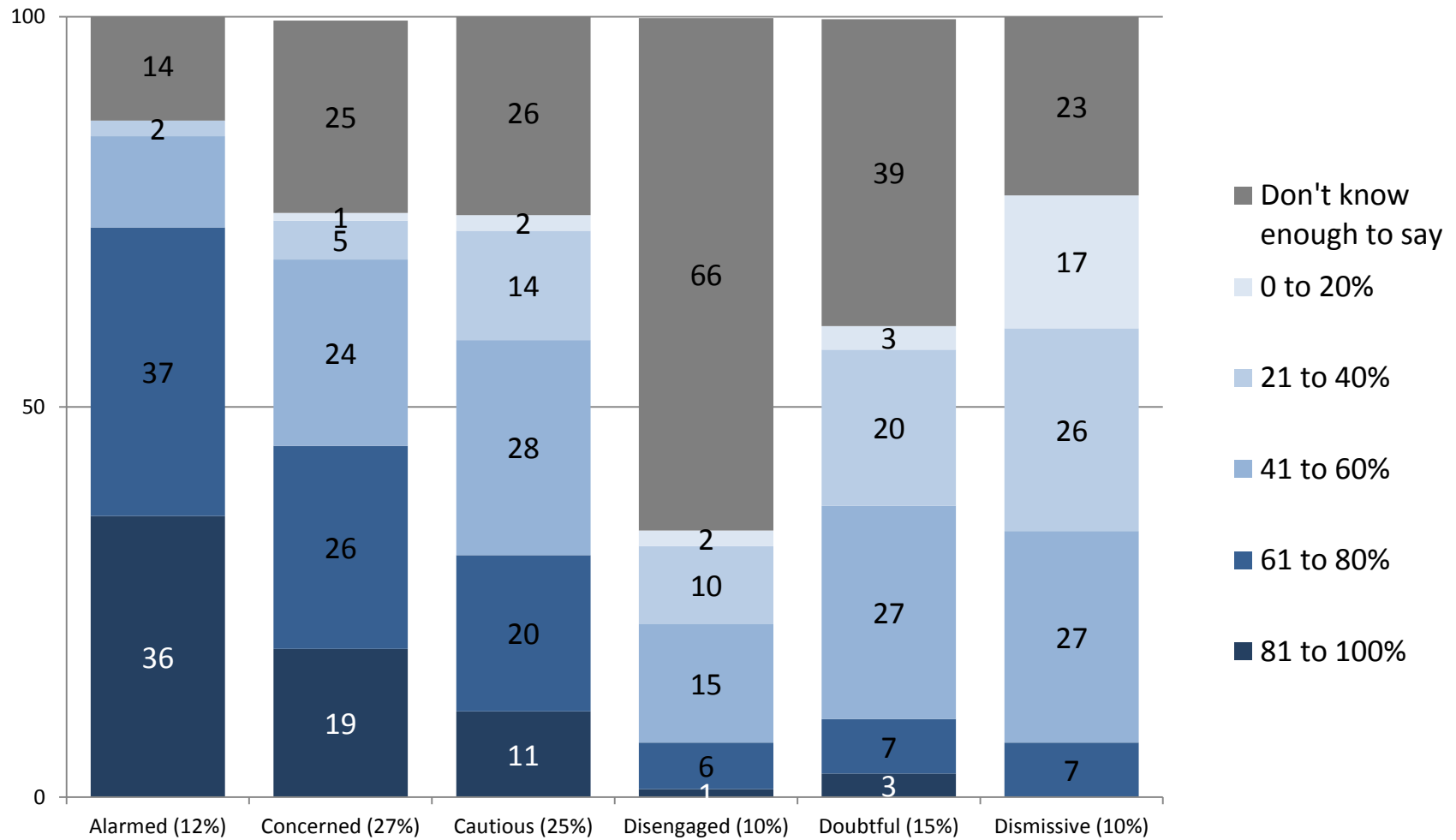
People can reduce global warming



n=2,129

Fall 2008

To the best of your knowledge, what proportion of climate scientists think that global warming is happening?

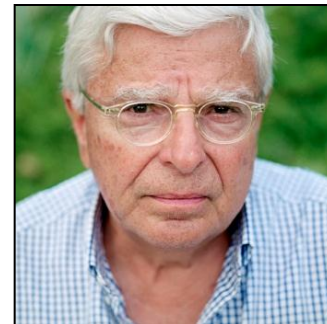


“If you could ask an expert on global warming one question, which question would you ask?”

What can the US do to reduce global warming?

How do you know that global warming is occurring?

What harm will global warming cause?



#5. If failure (of the public education effort) is not an option, create a public education team.

Effective public education is a team sport involving collaboration between:

- Content experts
- Decision science experts
- Communication experts



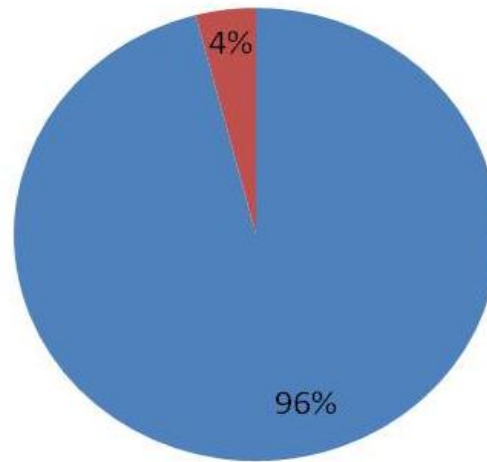
Baruch Fischhoff (2007). Non-persuasive Communication about Matters of Greatest Urgency: Climate Change. *Environmental Science & Technology* Online. 41:7204-8.

In Summary:

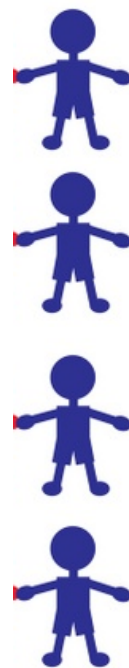
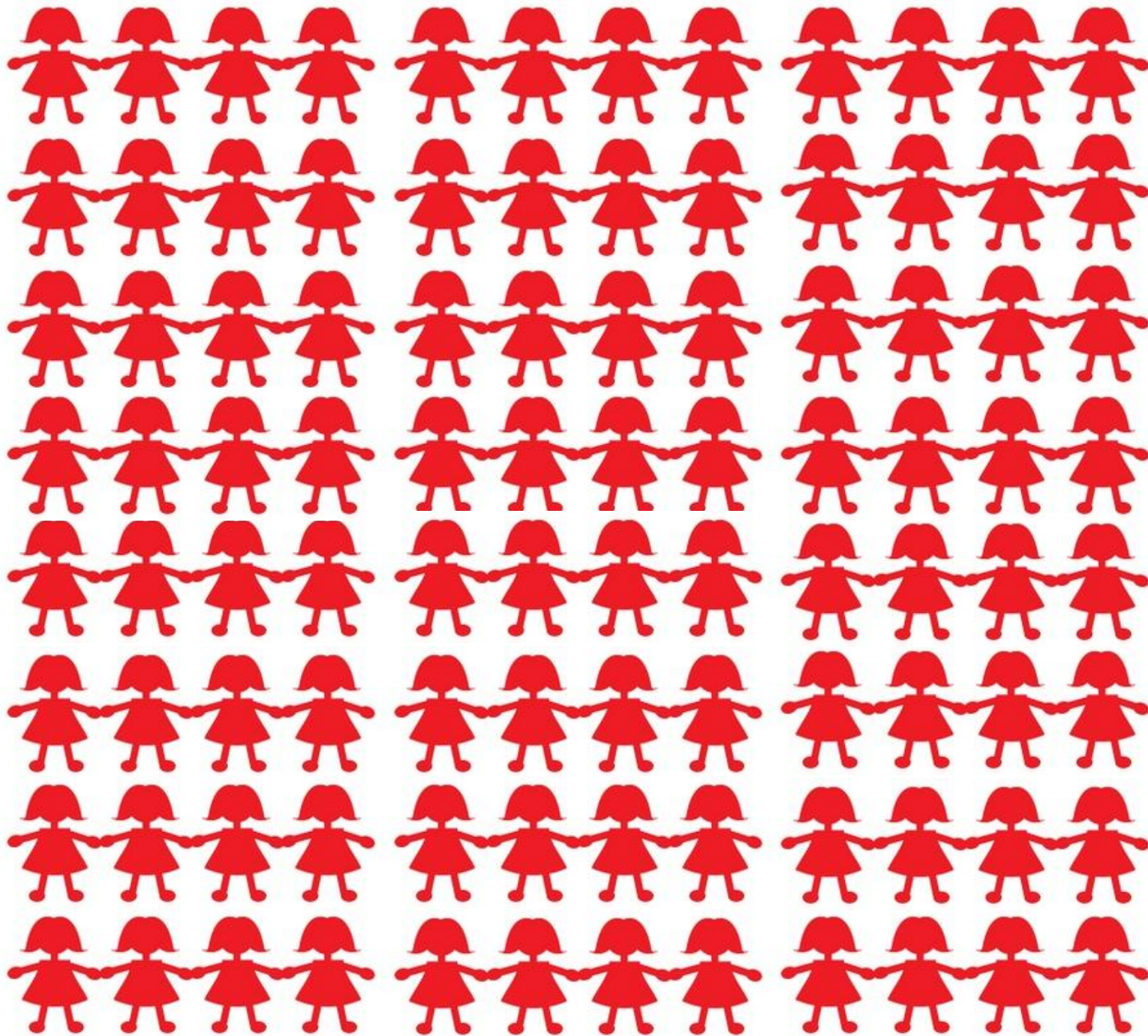
- Trust is your most important asset – cultivate it.
- The less you say, the more you're heard.
 - Simple clear messages, repeated often, by a variety of trusted source.
- Use audience research to determine what to say.
- There's no such thing as "the general public"
 - Recognize the diversity of views and plan accordingly
- If failure to engage the public is not an option, create a multi-disciplinary public engagement team

Climate scientists agree: Global warming is happening

- Climate scientists who are convinced global warming is happening
- Climate scientists who are not convinced that global warming is happening



*Results from a survey of over 10,000 Earth Scientists; go to [http://tiger.uic.edu/~pdoran/012009 Doran final.pdf](http://tiger.uic.edu/~pdoran/012009_Doran_final.pdf) to read the full report



If 95 doctors told you that you had cancer – would you be worried?

95% of scientists agree that global warming is happening.

[Learn More](#)



If 95 engineers told you that bridge was unsafe – would you be worried?

95% of scientists agree that global warming is happening.

[Learn More](#)



If 95 weather experts told you that you were in danger from a hurricane – would you be worried?

95% of scientists agree that global warming is happening.

[Learn More](#)



If 95 doctors said your kid was sick – would you be worried?

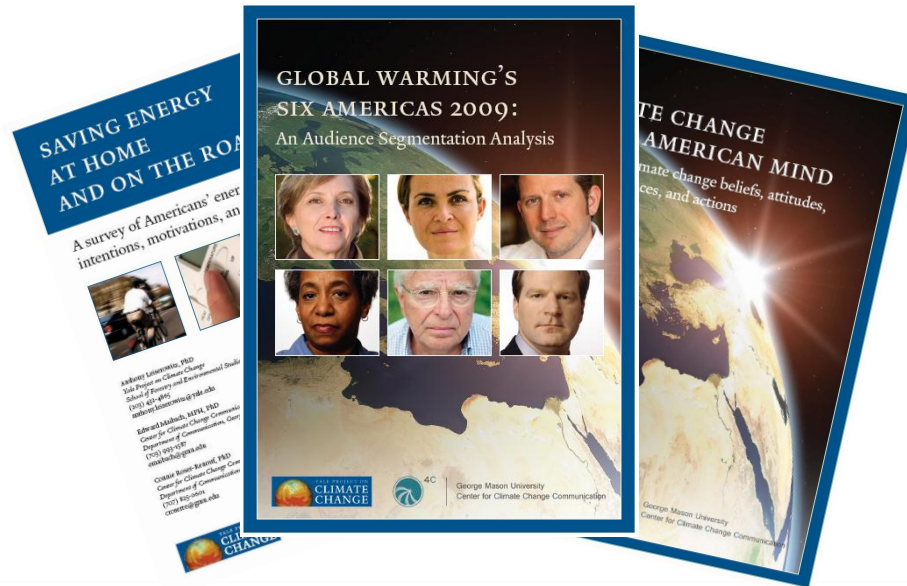
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Climatechangecommunication.org



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