

That can't possibly
be true!

The science of science communication

What is science?

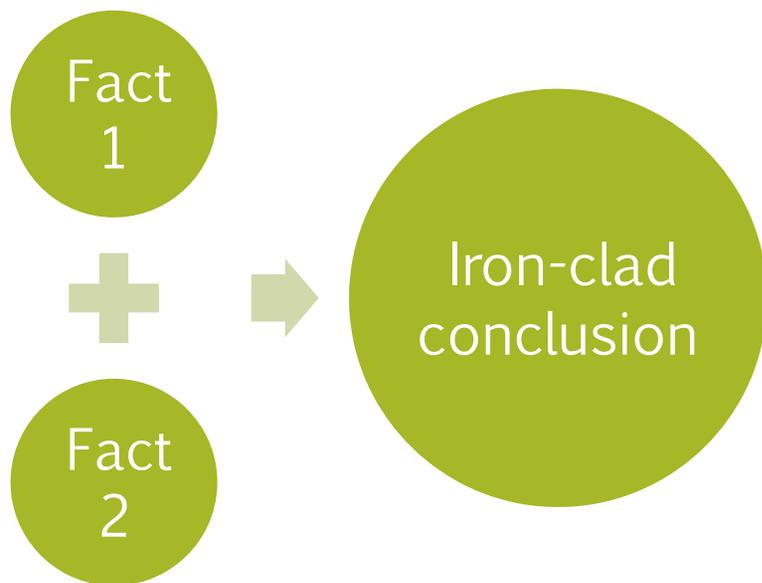
“The pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.”

According to Britain's Science Council

Making decisions about science

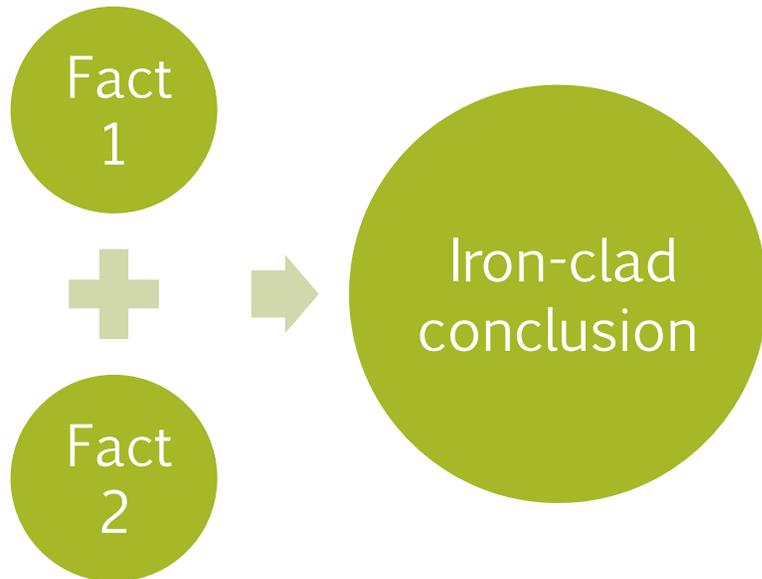
Making decisions about science

How we think we do it

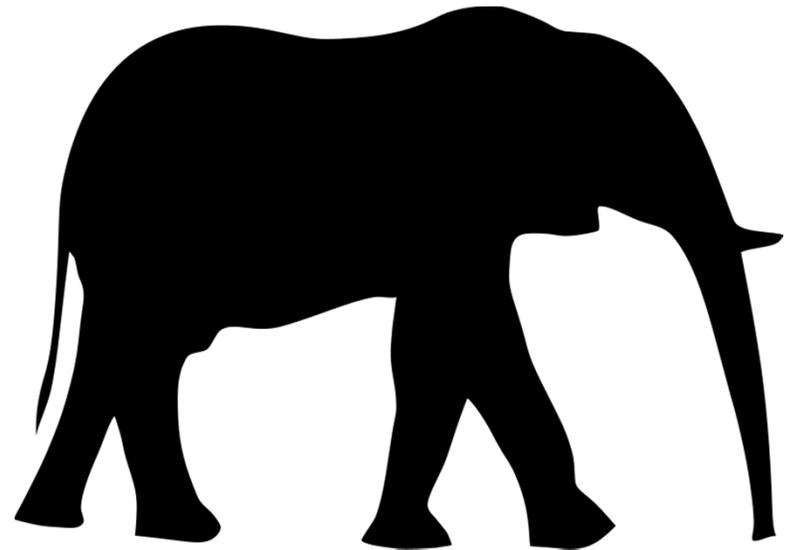


Making decisions about science

How we think we do it



How we really do it



How we make decisions

The elephant and the rider:

“We effortlessly and intuitively ‘see that’ something is true, and then we work to find justifications, or ‘reasons why,’ which we give to others.”

Jonathan Haidt, *The Righteous Mind*

How we make decisions

System 1 and System 2:

- System 1 makes snap judgments, subconsciously
- System 2 deliberates and evaluates
- System 2 acts as an advocate for System 1's conclusion

Daniel Kahneman, *Thinking Fast and Slow*

How we make decisions

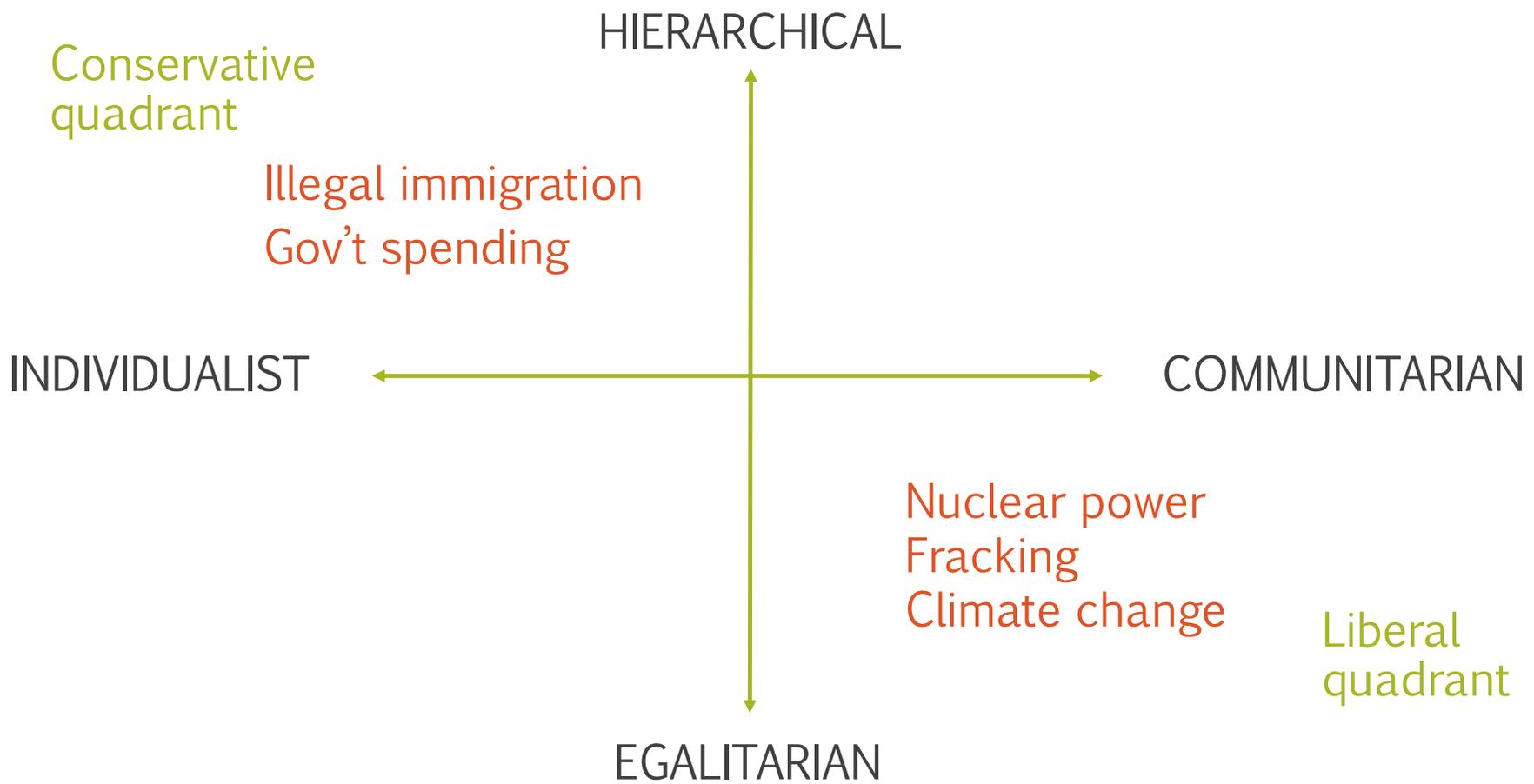
Reason is slave to the passions.

David Hume, 1711-1776

How we make decisions

“Cultural Cognition refers to the tendency of people to fit their perceptions of risk and related facts to their group commitments.”

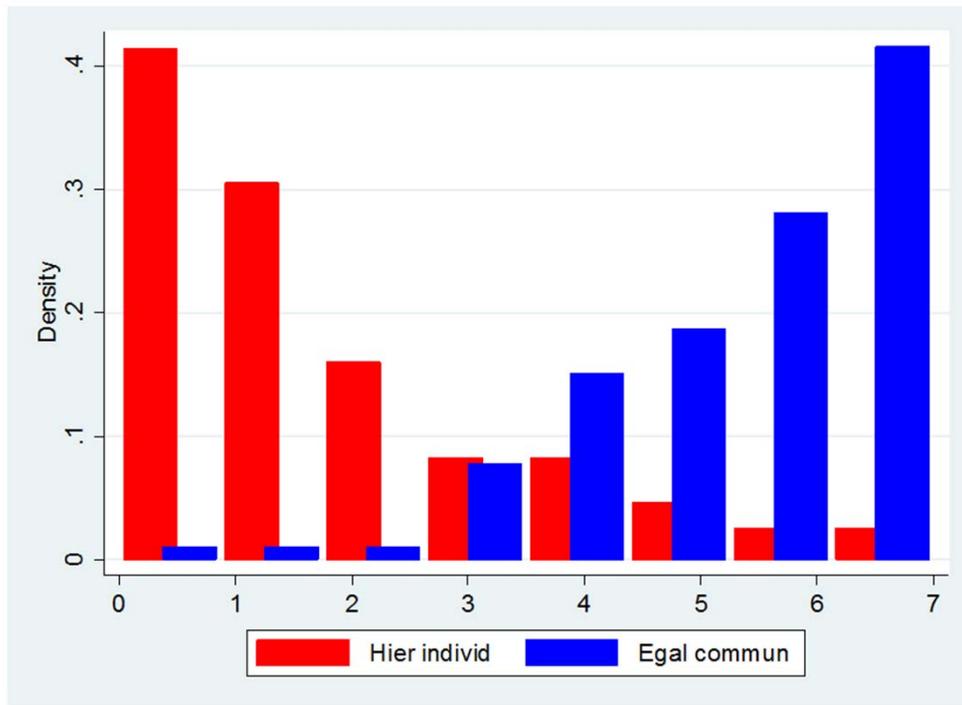
Dan Kahan, Yale Law School



Source: Cultural Cognition Project, Yale Law School

Not all issues skew along party lines

Global warming

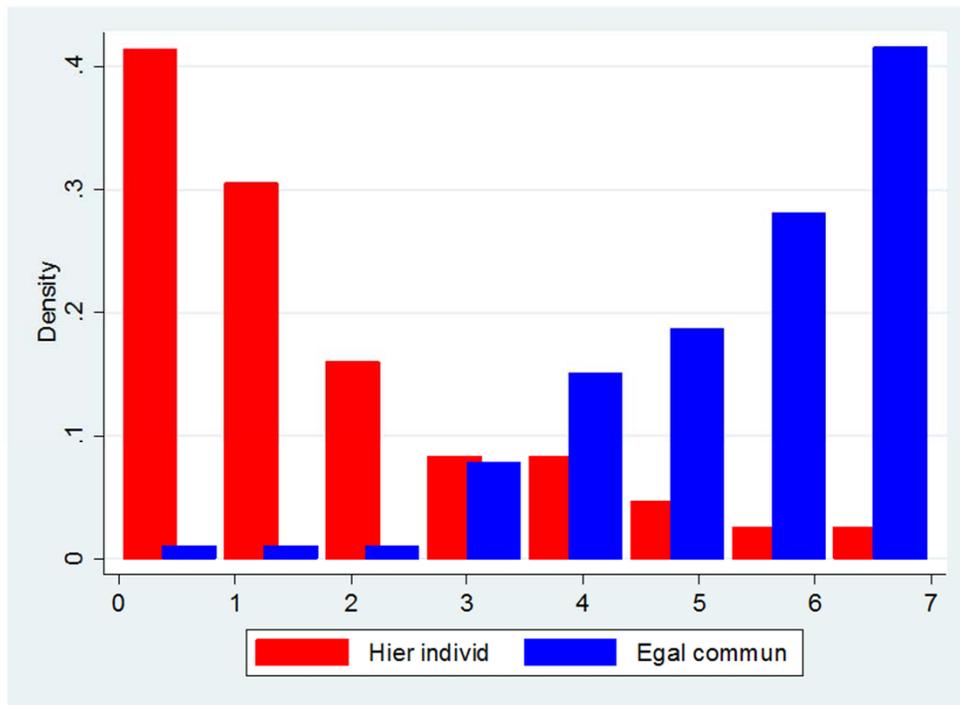


0 – 7 is perception of risk, low-high

Source: Cultural Cognition Project, Yale Law School

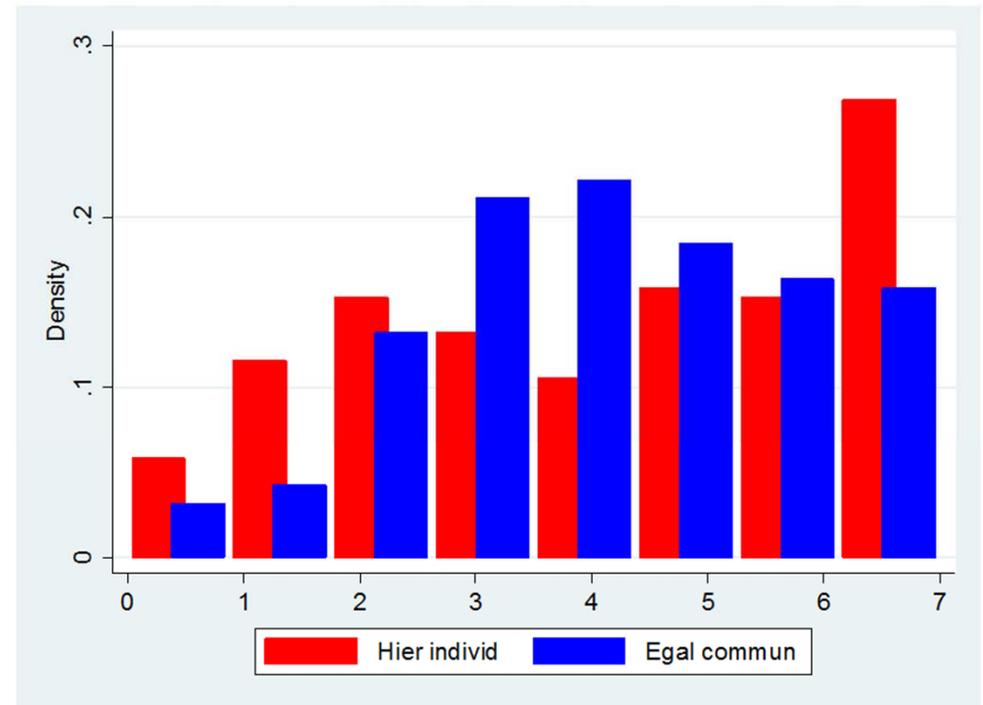
Not all issues skew along party lines

Global warming



0 – 7 is perception of risk, low-high

GM foods



Source: Cultural Cognition Project, Yale Law School

Confirmation bias, Step One:

- We seek sources of information that share our values, and confirm our views.
 - New York Times or Wall Street Journal?
 - Fox News or CNN?
 - Tom Philpott or Keith Kloor?
 - Social media friends
 - Actual friends

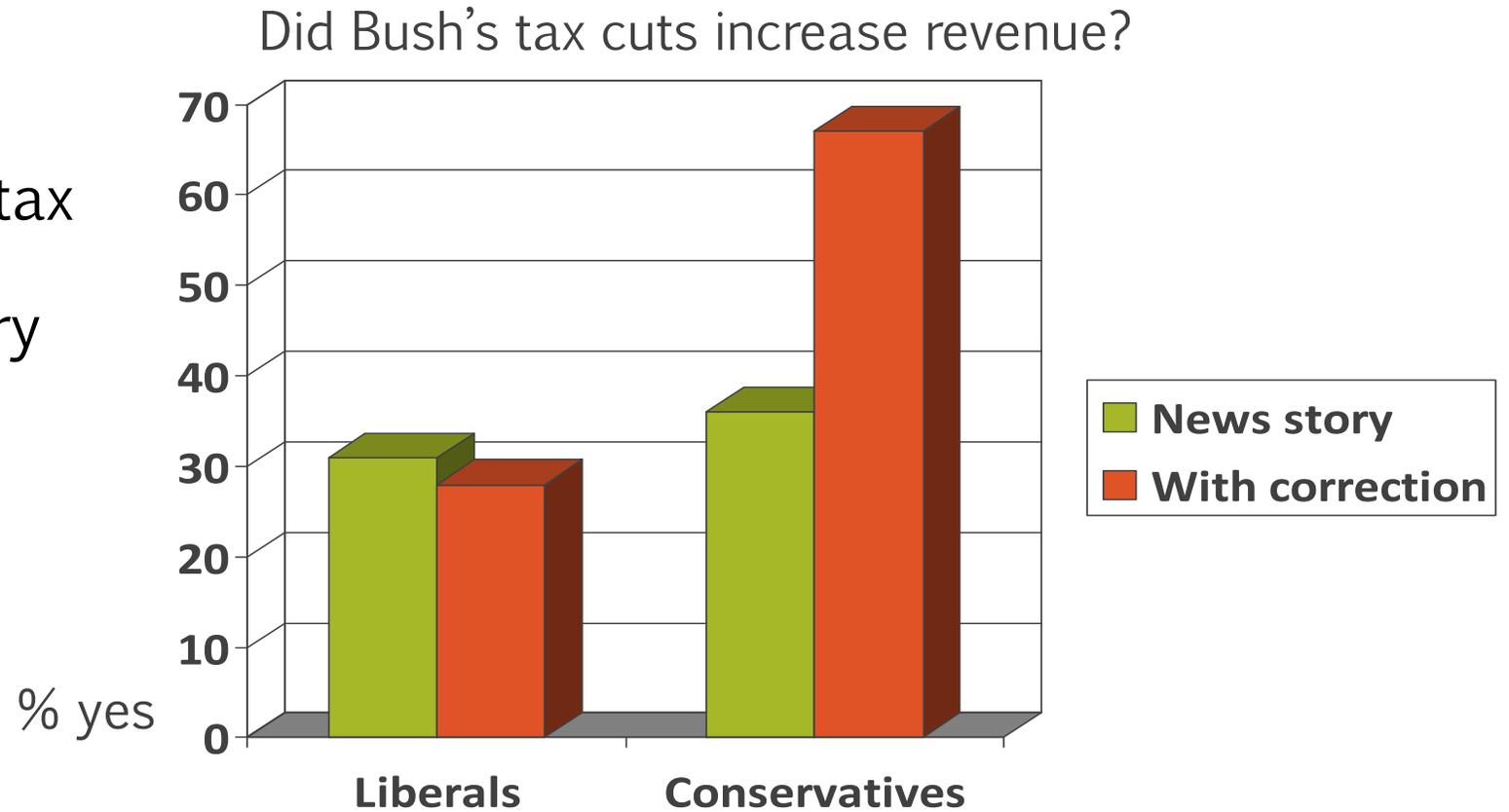
Confirmation bias, Step Two:

- We accept or reject information based on how closely it conforms to our view
 - We find innovative ways to reject ‘facts’ we disagree with
 - Facts that contradict our views can actually strengthen those views: the backfire effect
 - We evaluate experts’ credibility based on whether we agree with them
 - Knowing science doesn’t protect you

Facts are not persuasive

- They can deepen the divide

After reading a story that said tax cuts increased revenue, or story with correction.



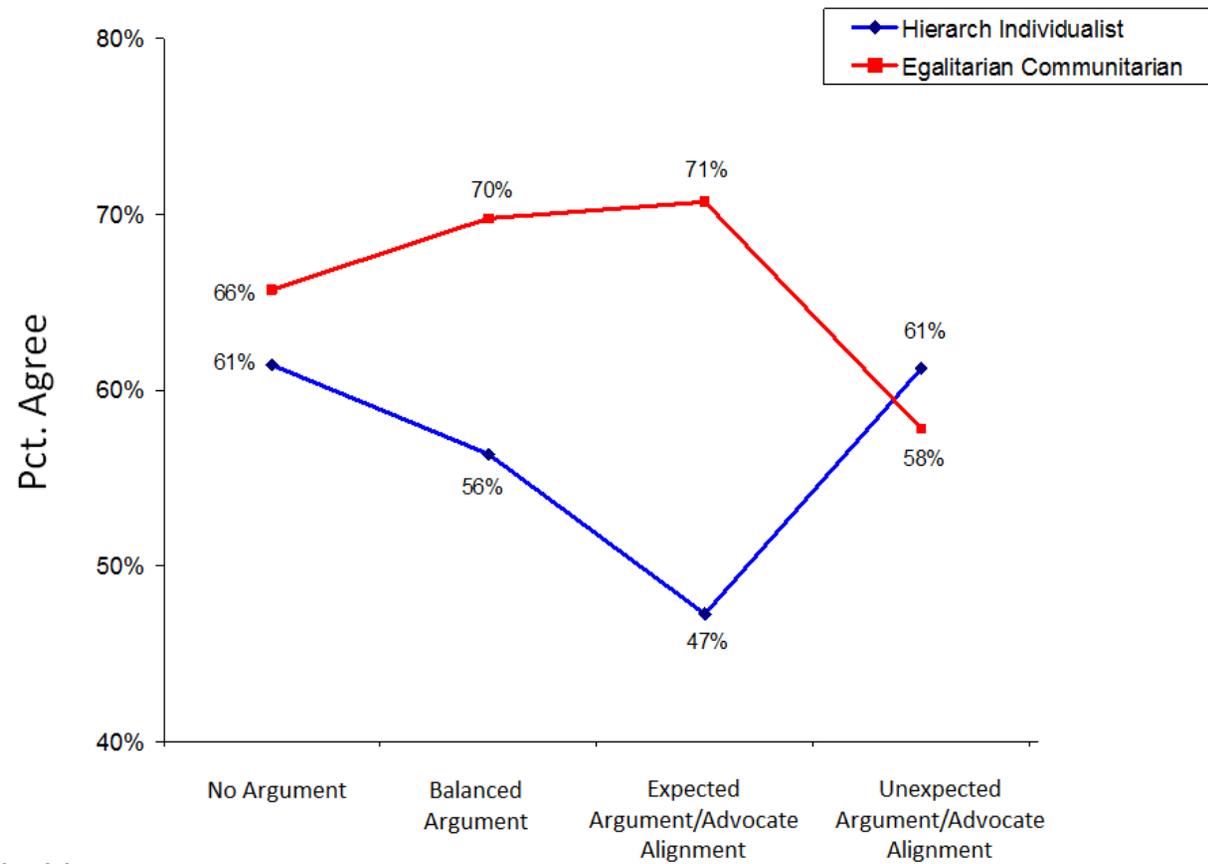
Source: Brendan Nyhan, Dartmouth College, 2010

Facts are not persuasive

- They can deepen the divide
 - The messenger matters
-

How the messenger influences the message

"The HPV vaccine is safe for use among young girls..."

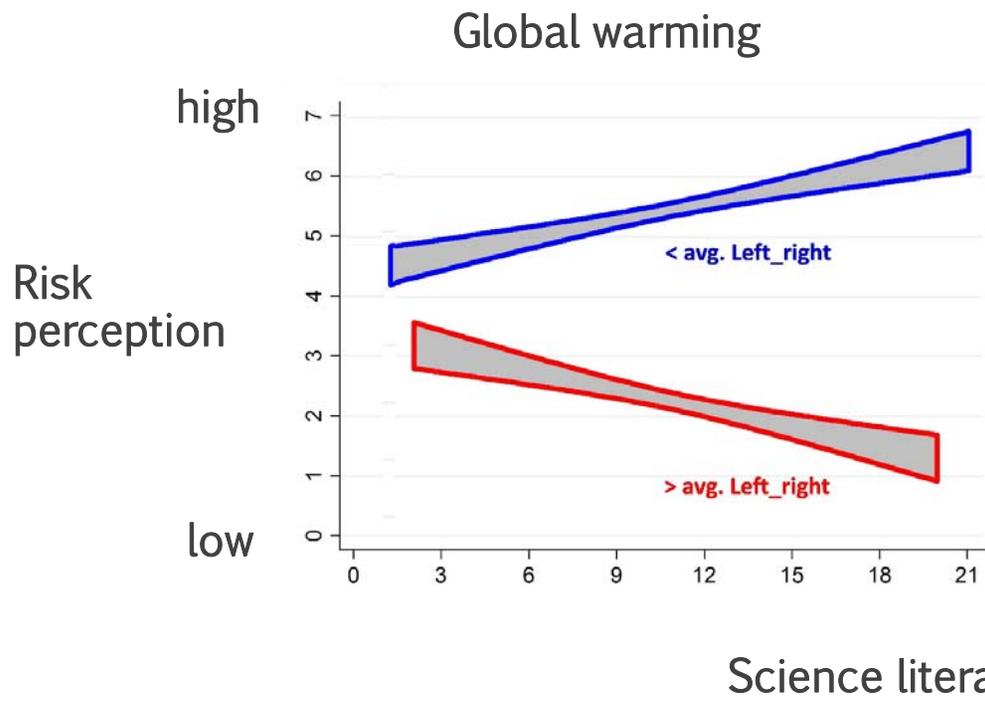


Source: Cultural Cognition Project, Yale University

Facts are not persuasive

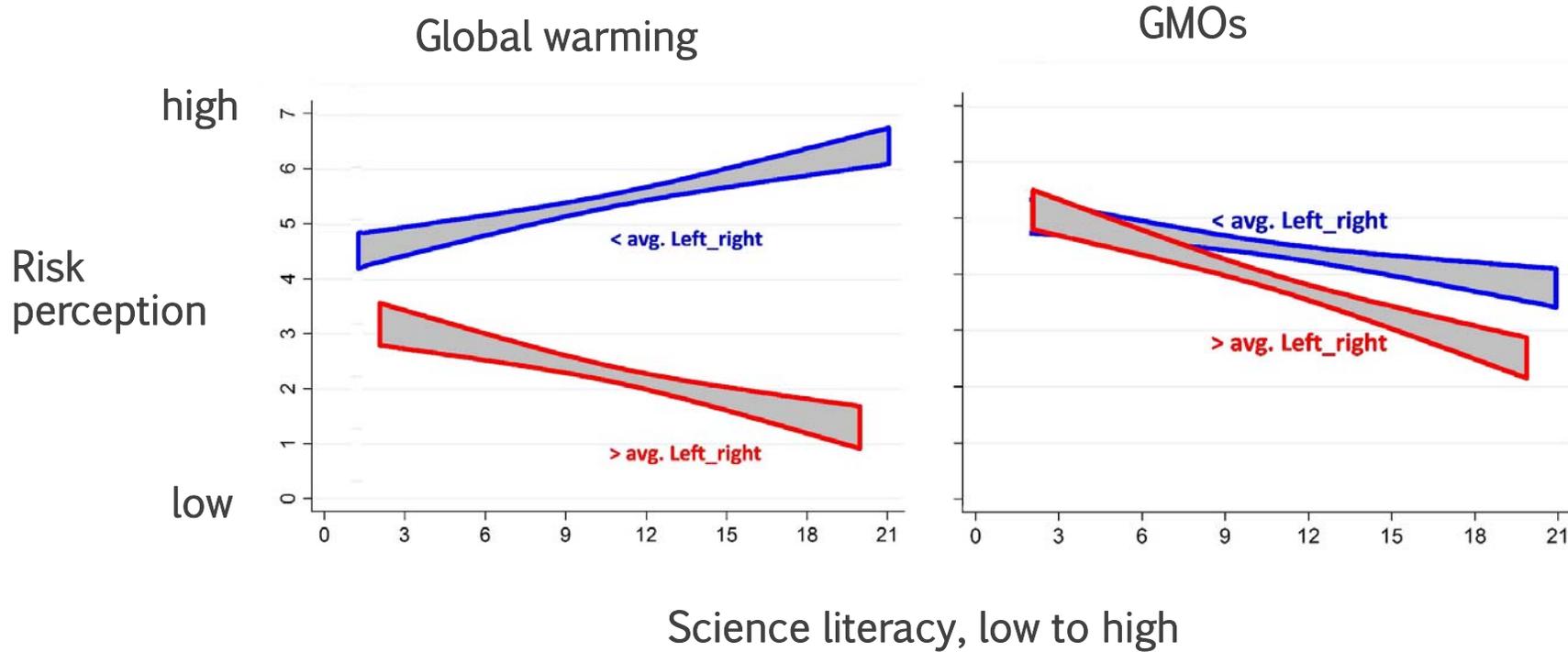
- They can deepen the divide
 - The messenger matters
 - Science literacy isn't the issue
-

What does science have to do with it?



Source: Cultural Cognition Project, Yale University

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Source: Cultural Cognition Project, Yale University

How to communicate more effectively

Ask yourself two questions

Ask yourself two questions

- Are you confident that all your opinions are right?

Ask yourself two questions

- Are you confident that all your opinions are right?
 - When was the last time you were persuaded by facts?
-

Elephant wrangling begins at home

- To be more persuasive, start by checking your own biases
 - Convince yourself that you have them.
 - Vet your sources. Are you listening to disinterested people?
 - Find the smartest person who disagrees with you, and talk.
 - Manage your social media.
 - For every issue, ask you yourself whether this could be the one you're wrong about.
-

Small steps toward better communication

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- Acknowledge both risks and benefits

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 - Aim for transparency
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 - Become the arbiter people trust
 - Understand and appeal to values
 - Tell stories about people
 - Build coalitions
-