

Science and journalism: the elephant in the room

National Academy of Sciences, January 15-16, 2015

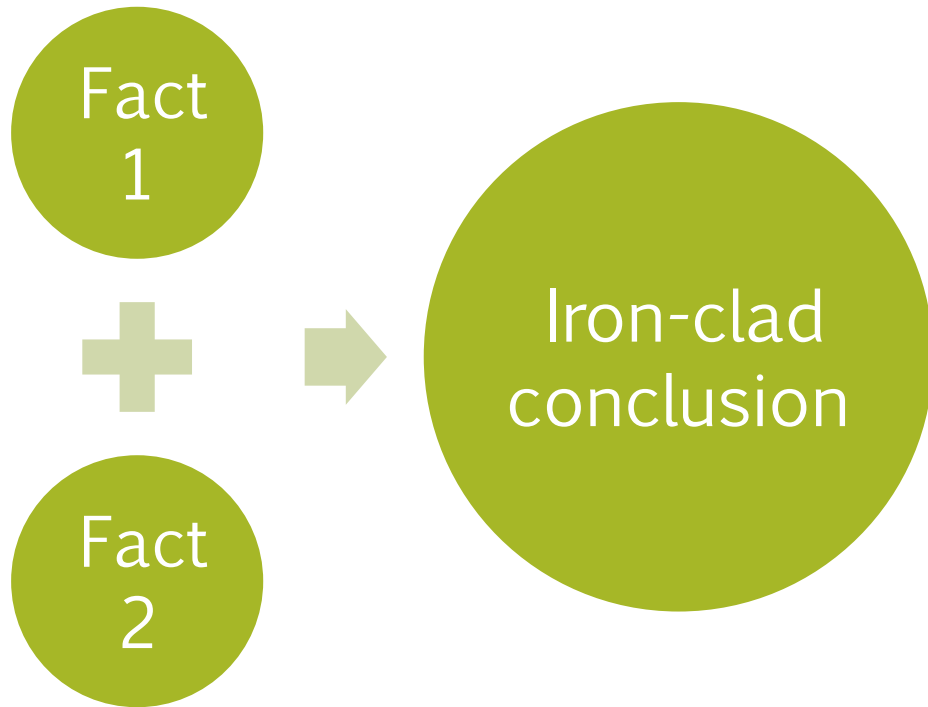
BRAIN, n.

The apparatus with which we think that we think.

Ambrose Bierce, THE DEVIL'S DICTIONARY

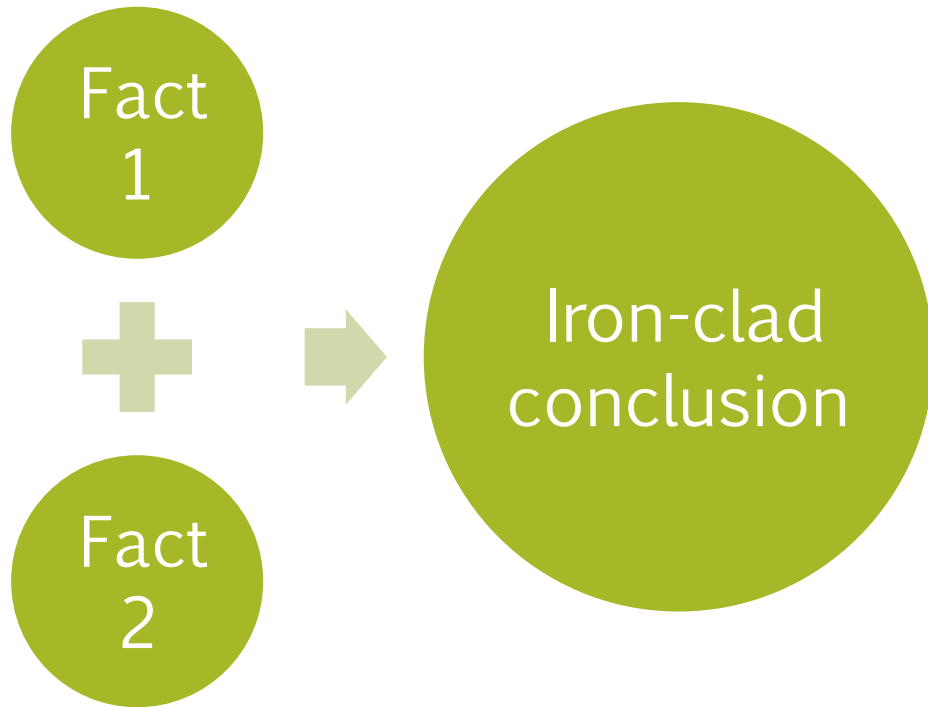
Making decisions about science

How we think we do it

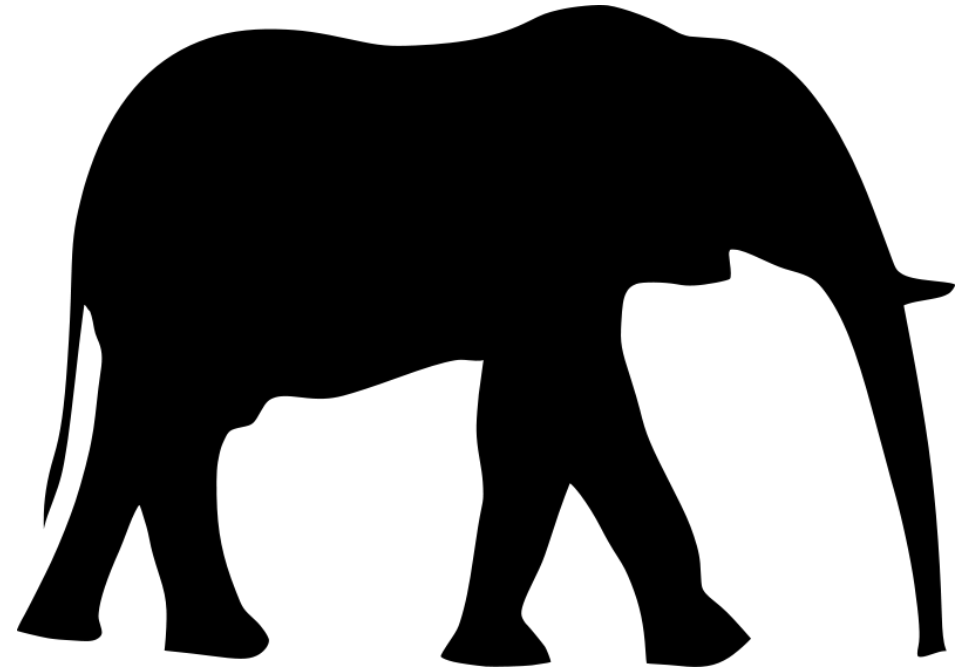


Making decisions about science

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

Confirmation bias rules the human psyche

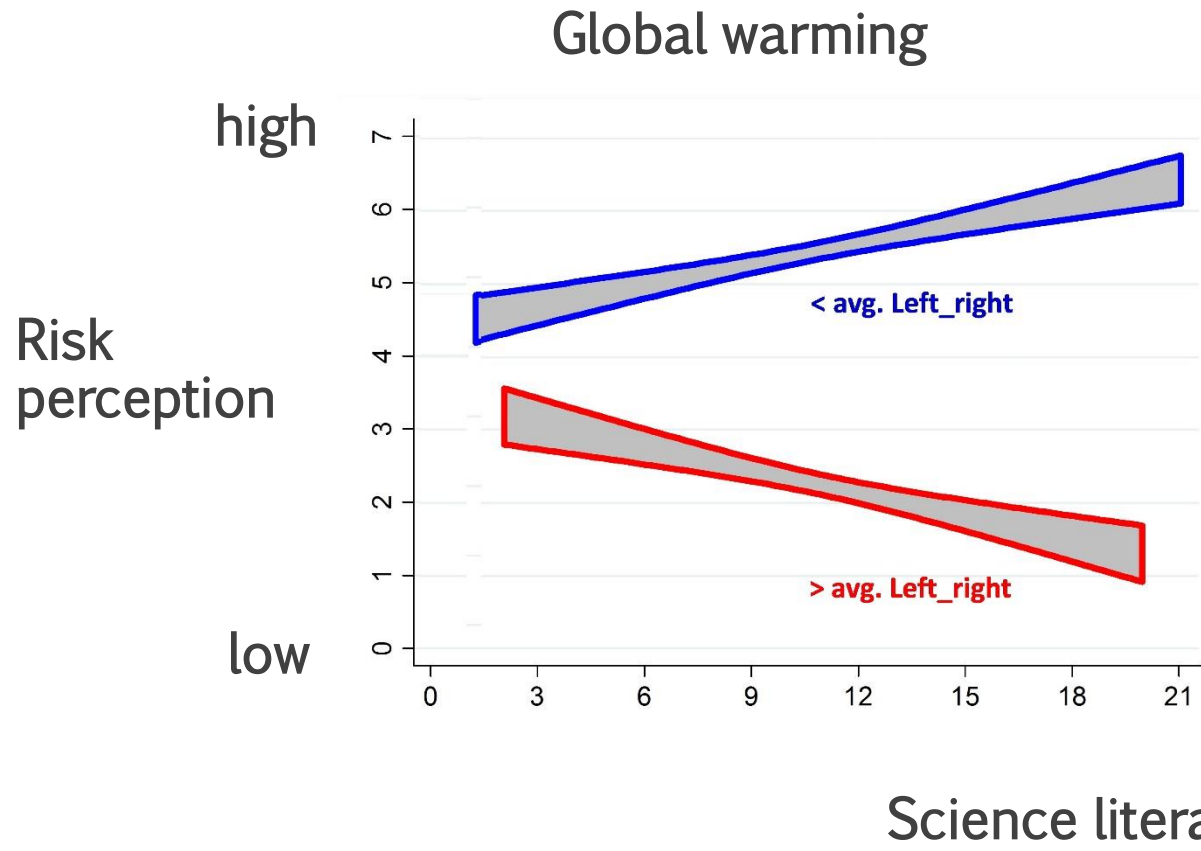
- We seek sources of information that share our values, and confirm our views.
 - MSNBC or CNN? New York Times or Wall St. Journal?
 - Social media friends
 - Actual friends
- We accept or reject information based on how closely it conforms to our view
 - We find innovative ways to reject ‘facts’ we 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

Science doesn't protect you

“I'm not pro-GMO or anti-GMO. I follow the science, and go where it leads me.”

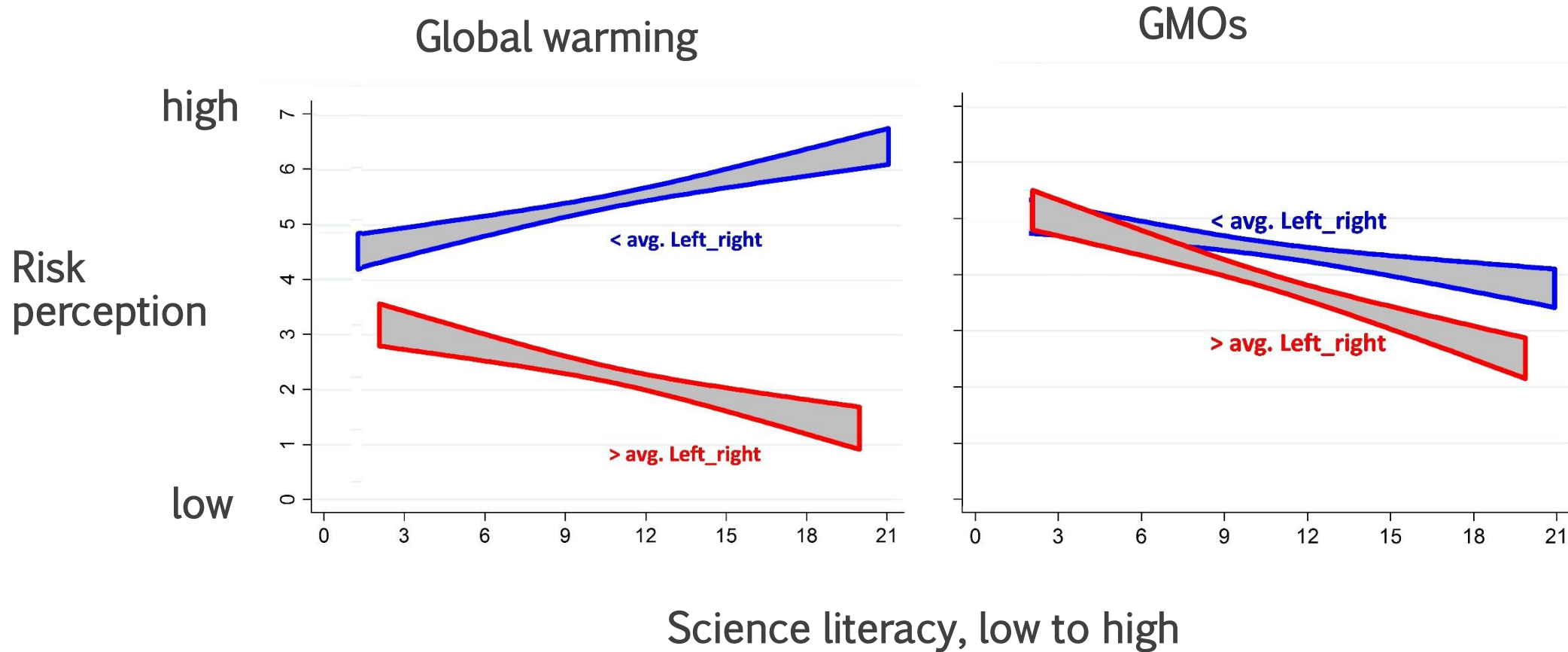
- Doug Gurian-Sherman, PhD, senior scientist and director of sustainable agriculture, Center for Food Safety
- Kevin Folta, PhD, professor and chairman, horticultural sciences department, University of Florida

Science doesn't protect you



Source: Cultural Cognition Project, Yale University

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Education doesn't protect you

“Educated citizens possess the cognitive skills to reject facts inconsistent with prior dispositions...the most educated partisans are furthest apart in their factual understanding. Our primary concern resides with the inability of education to overcome powerful partisan motives; education intensifies those motives.”

“Who Knows Best? Education, Partisanship, and Contested Facts (Joslyn and Haider-Markel, POLITICS & POLICY, 2014)

Facts can be slippery

“Most published research findings are false.”

John Ioannidis, PLoS Medicine, 2005

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Mark Twain

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“We want to present the compelling censored science other museums do not show, so that people can draw their own conclusions.”

Mission of the Northwest Science Museum

If facts aren't persuasive,
how do we communicate
about science?

A question for journalists, scientists, and readers

Small steps toward better communication

- Be convinced. Elephant wrangling begins at home.

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- Find the smartest person who disagrees with you, and listen.

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- Vet your sources. Manage your media.
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- Find the smartest person who disagrees with you, and listen.
- Understand and appeal to values. Tell stories about people.

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- Vet your sources. Manage your media.
- Acknowledge both risks and benefits.
- Find the smartest person who disagrees with you, and listen.
- Understand and appeal to values. Tell stories about people.
- Reach across the aisle.

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