



NATIONAL
ESTUARINE
RESEARCH
RESERVE
SYSTEM



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The Science of Science Denial

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Skepticism

Vs.

Denial

Considers
Evidence



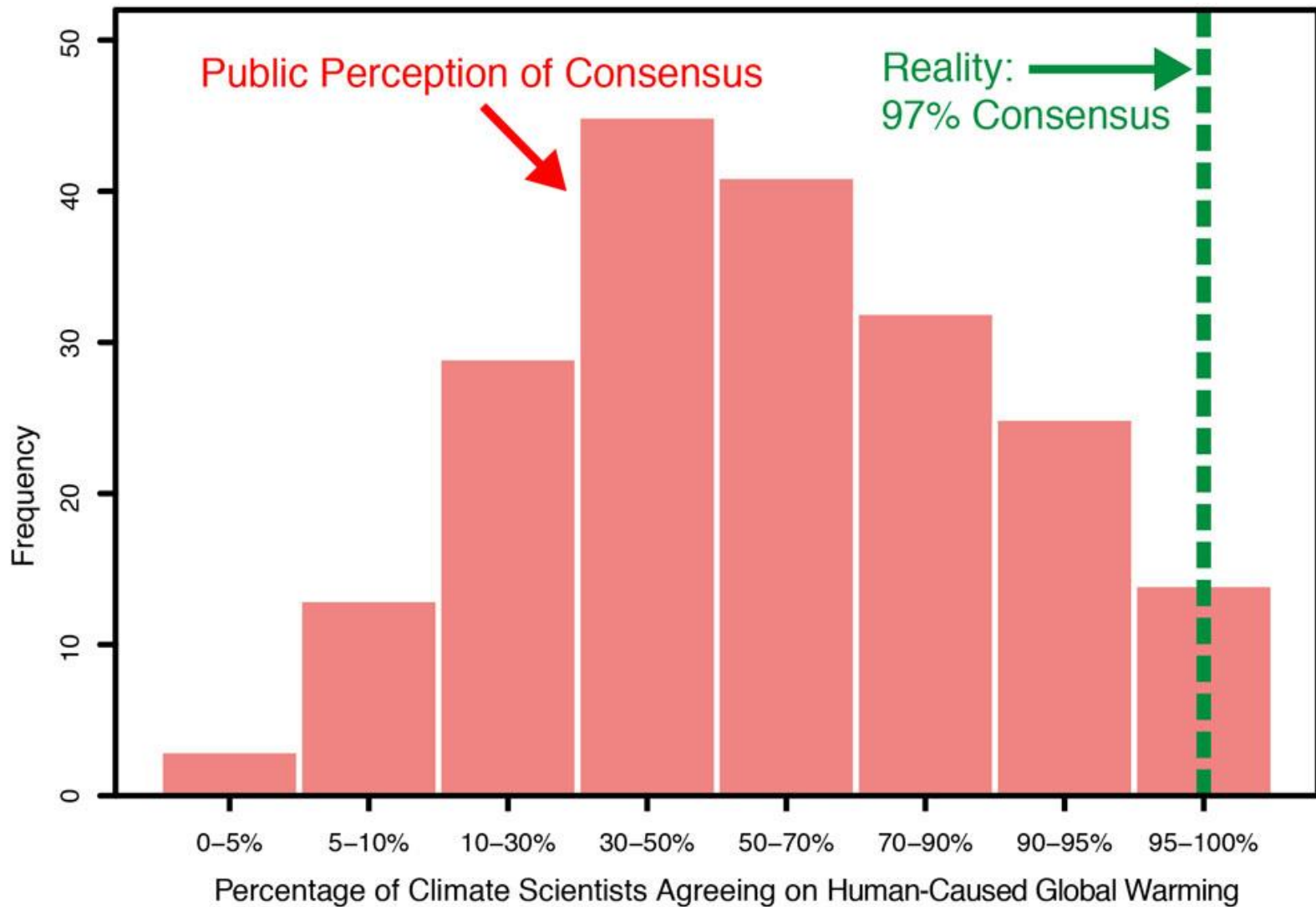
Comes to a
Conclusion

Comes to a
Conclusion



Disregards
Evidence





Why is climate change so controversial
among the general public?



The Nature of the Climate Debate

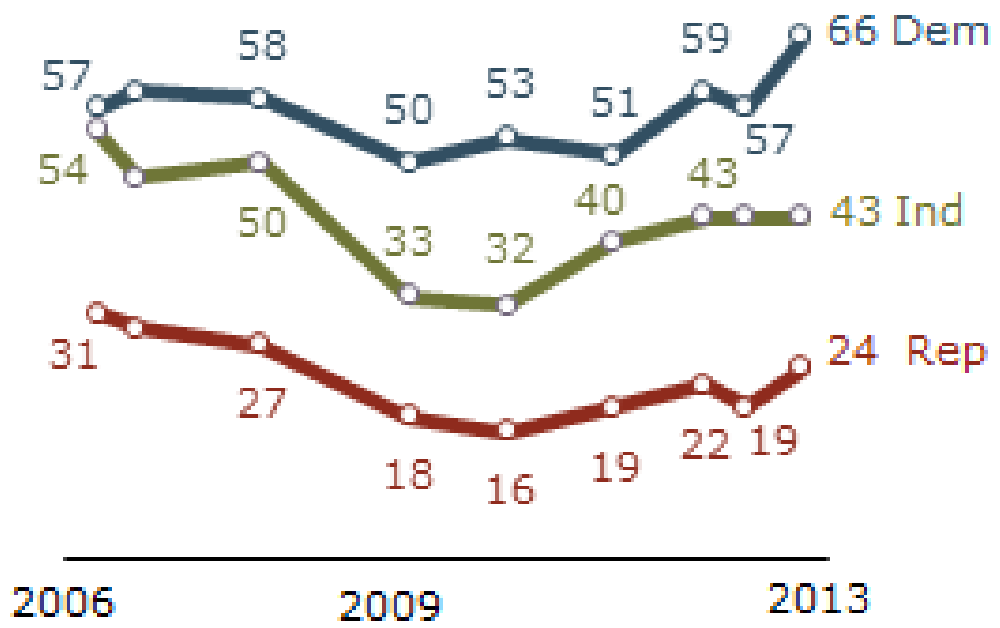
The debate about if climate change is real or if it is human caused is a
“Political debate being made to look
like a scientific debate”

- Naomi Oreskes



Partisan Gap over Whether Human Activity is Main Cause of Warming

% who say global warming is happening mostly because of human activity



PEW RESEARCH CENTER Oct. 9-13, 2013.



Motivations for Denial

This is not a question of science illiteracy. We can't just explain the facts better.

- Worldview
- Ideology



Climate belief in response to different policy solutions



Cambell and Kay, 2014

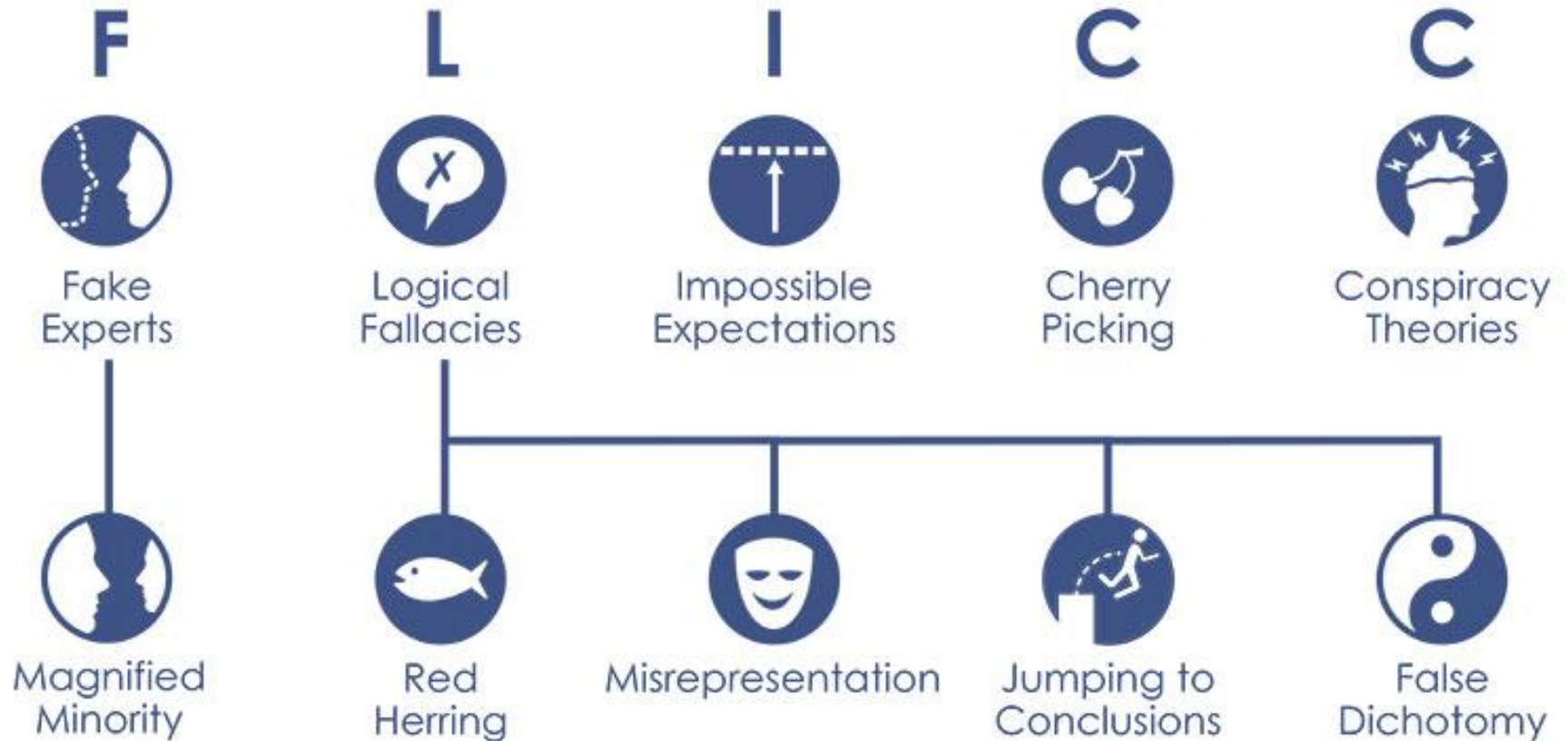


Characteristics of Science Denial

Are there patterns?
What tactics are used?



5 CHARACTERISTICS OF SCIENCE DENIAL



Diethelm & McKee (2009)





FAKE EXPERTS

- People attribute more expertise to those they agree with
- This results in distorted perception of scientific consensus





IMPOSSIBLE EXPECTATIONS

- Disconfirmation bias:
resisting threatening
evidence





CHERRY PICKING

- Confirmation bias: remember the hits, forget the misses

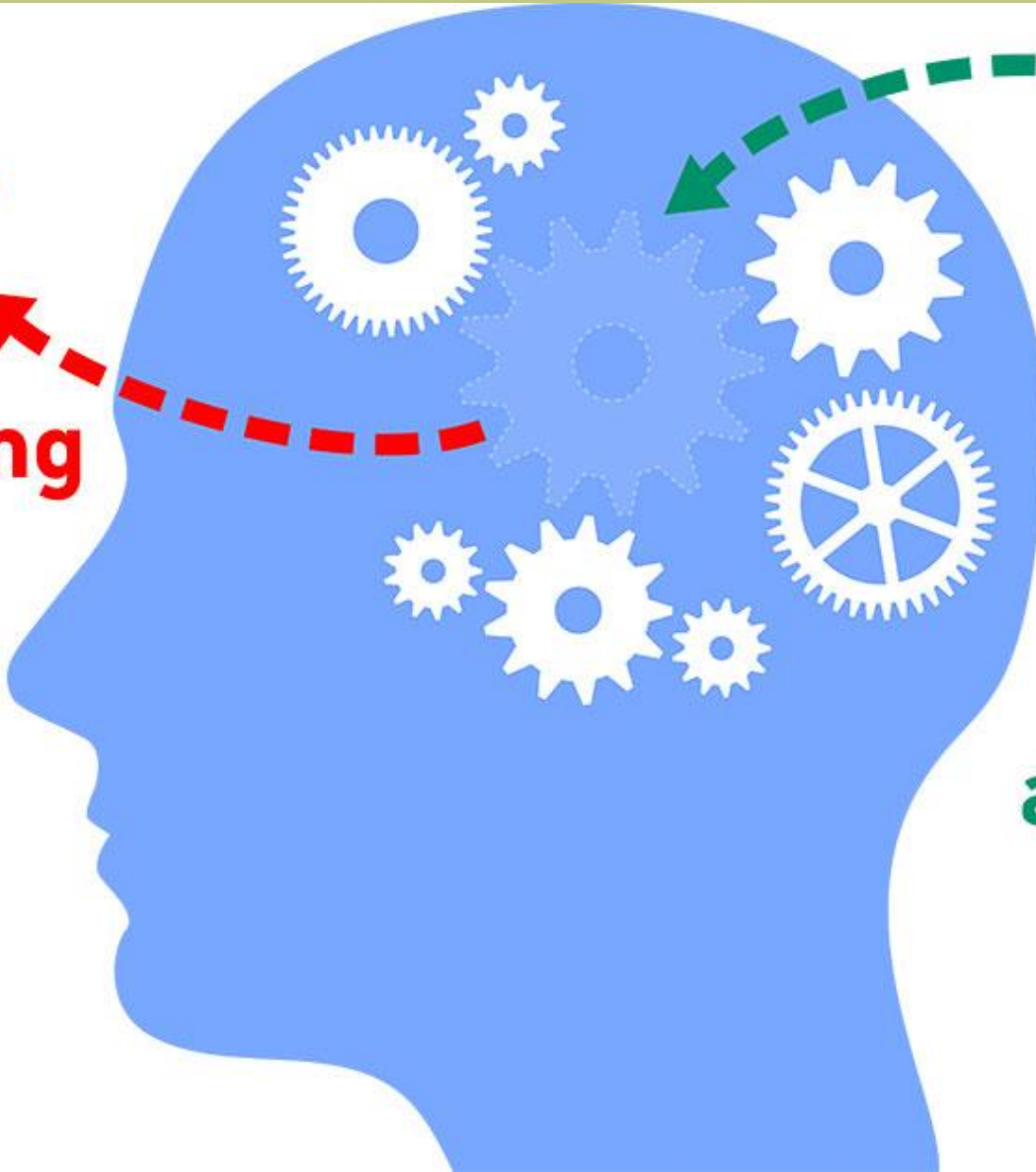


Debunking Climate Myths: The Message and the Messenger





**Debunking
a myth
creates
a gap**



**Fill the
gap with
a factual
alternative**



DEBUNKING

Structure of an effective debunking

FACT

MYTH

FALLACY

Denial 101x, 2015



Familiarity Backfire Effect

Repeating the myth increases familiarity,
reinforcing it



Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012).



Overkill Backfire Effect

Simple myths are more cognitively attractive than complicated refutations

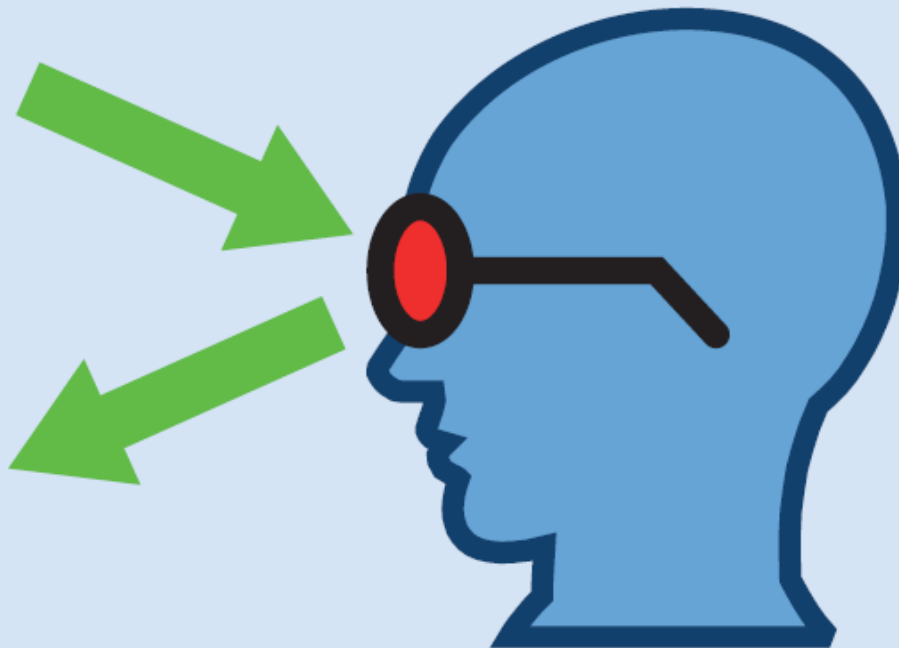


Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012).



Worldview Backfire Effect

Evidence that threatens worldview can strengthen initially held beliefs



Lewandowsky, S., Ecker, U. K., Seifert, C. M., Schwarz, N., & Cook, J. (2012).



What other strategies are available?



Thank You!

Questions?

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