



# PERCEPTION AND THE PUBLIC

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Risk = Hazard + Outrage

# RISK COMMUNICATION: What is it?

*(Covello, 1992; DHHS 2002)*

A blurred photograph of two men in business suits standing and talking. The man on the left is gesturing with his hands while the man on the right listens with his hand near his face.

The **exchange** of information among *interested parties* about the **nature, magnitude, significance**, and **control** of risks.

# Key Areas Related to **RISK COMMUNICATION**

**RISK** Perception  
Assessment  
Messaging  
Decision-Making  
Planning/Management

**+ Media response to crisis/risk**

# Fischhoff (1995)

**Table I. Developmental Stages in Risk Management (Ontogeny Recapitulates Phylogeny)**

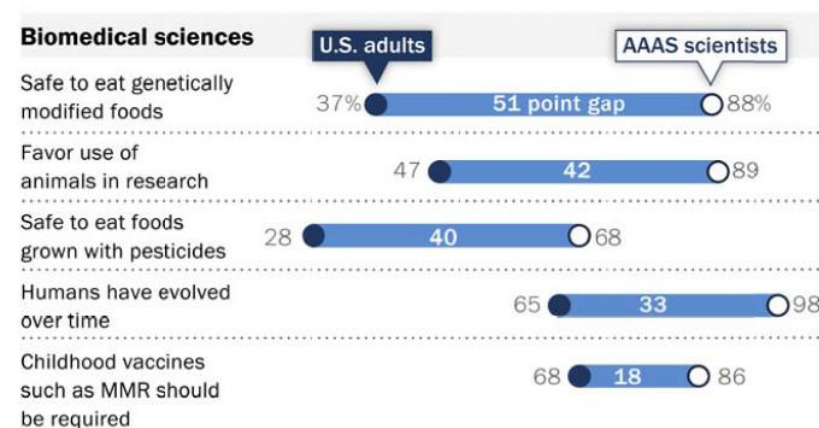
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- All we have to do is get the numbers right
  - All we have to do is tell them the numbers
  - All we have to do is explain what we mean by the numbers
  - All we have to do is show them that they've accepted similar risks in the past
  - All we have to do is show them that it's a good deal for them
  - All we have to do is treat them nice
  - All we have to do is make them partners
  - All of the above
-

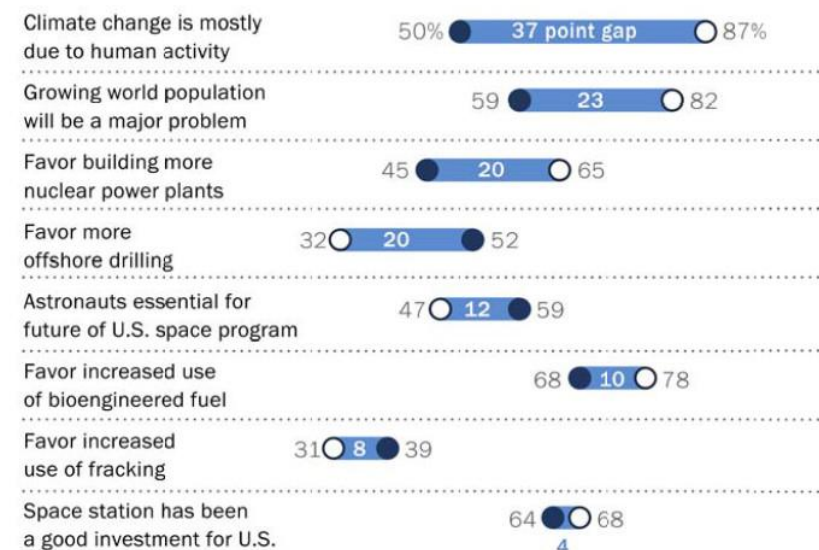


# Opinion Differences Between Public and Scientists

% of U.S. adults and AAAS scientists saying each of the following



## Climate, energy, space sciences



Survey of U.S. adults August 15-25, 2014. AAAS scientists survey Sept. 11-Oct. 13, 2014. Other responses and those saying don't know or giving no answer are not shown.

PEW RESEARCH CENTER

# THE PUBLIC VS THE EXPERTS

**TRUST US—  
WE'RE  
EXPERTS!**

JOHN STAUBER  
AND  
SHELDON RAMPTON



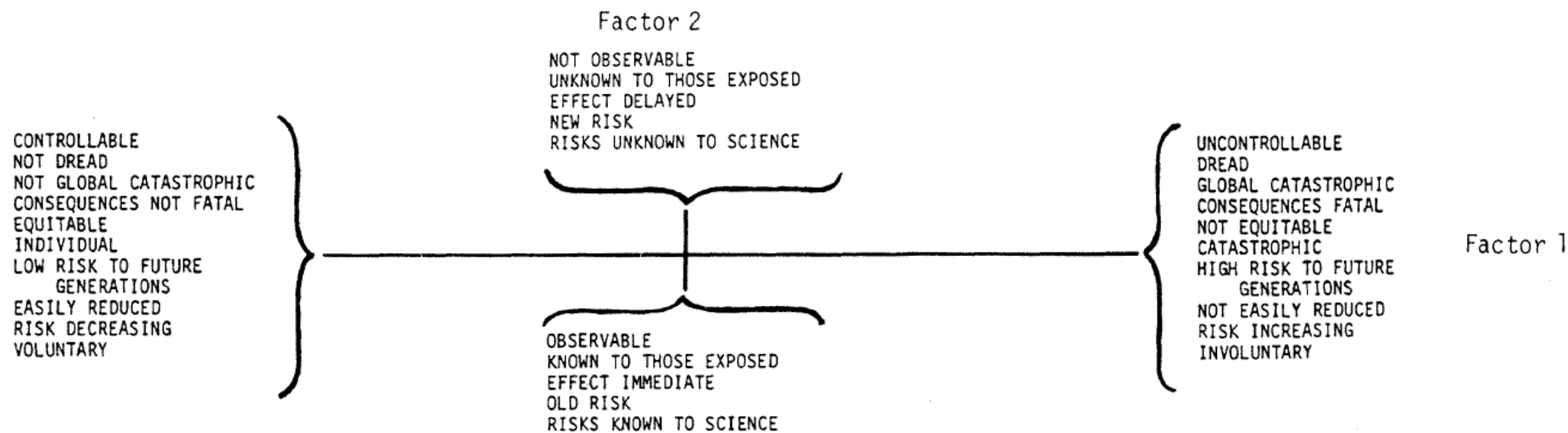
Symbolic  
legitimacy



# Dual processes in reasoning and decision making



# Slovic et al (1987) Two factors that define risk perception: Dread, Known

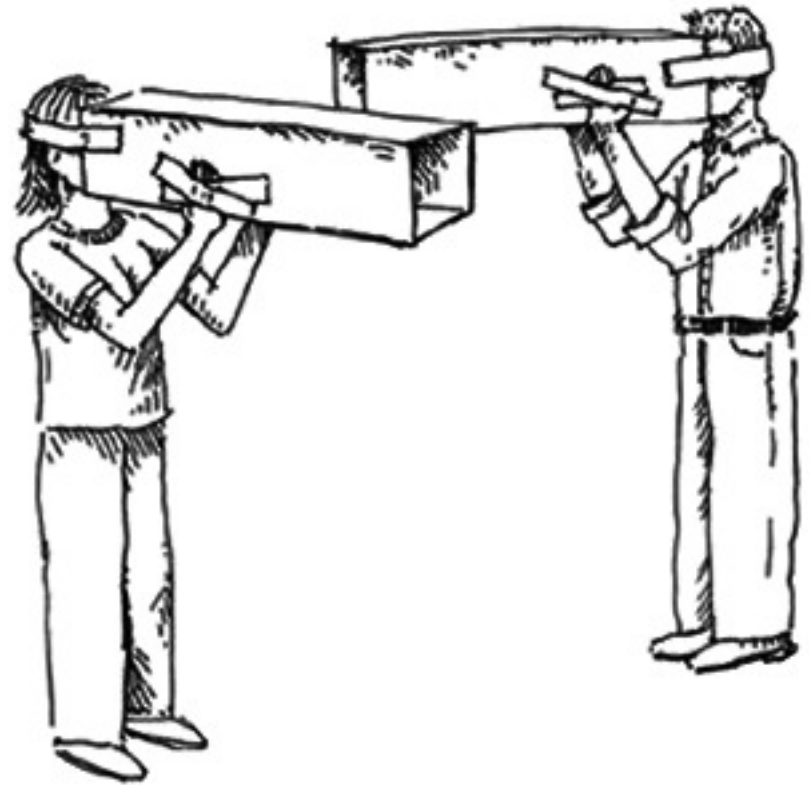


# The Affect Heuristic AKA Risk as feelings... (Slovic et al., 2004)



# Biases In Risk Perception

- Overconfidence
- Optimistic Bias
- Illusion of control
- Belief in law of small numbers







THE WEATHER  
AUTHORITY

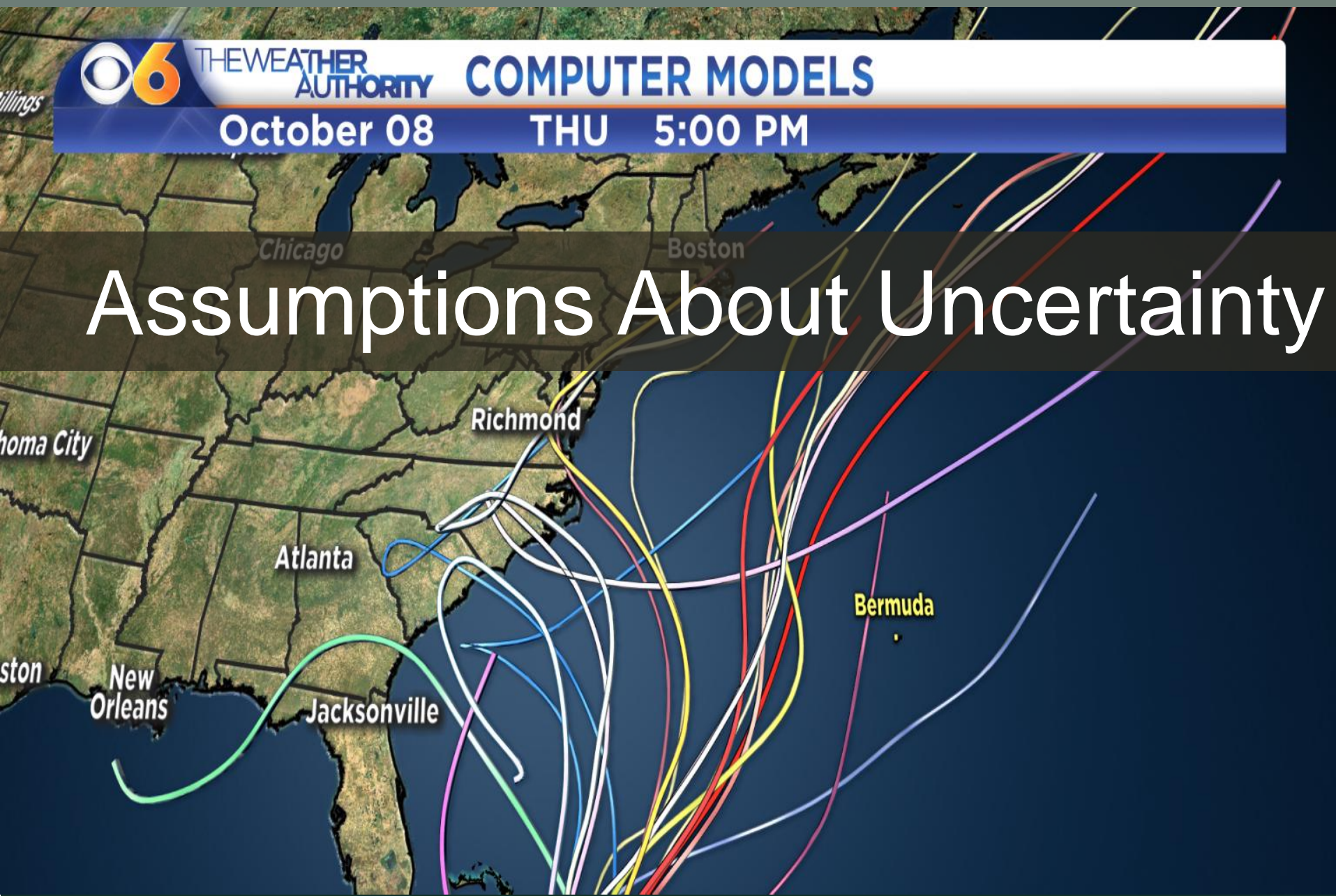
COMPUTER MODELS

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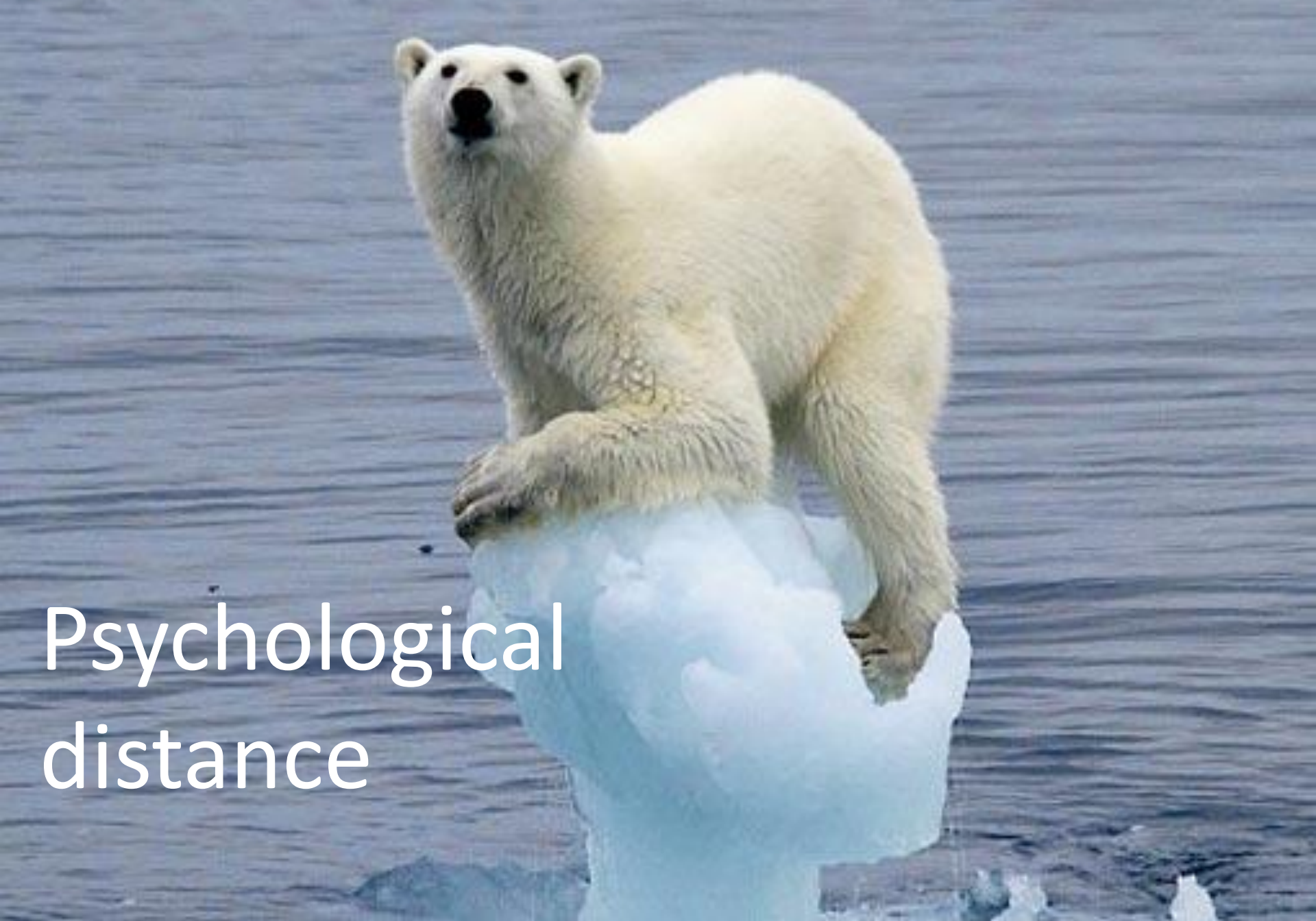
# Assumptions About Uncertainty





# How is uncertainty communicated?

- Numbers (probabilities, ranges as opposed to point estimates, distributions)
- Verbal probability statements (likely/not)
- Evaluative Statement - “safe” vs. “unsafe”  
“high” vs. “low”
- Other factors about a hazard that are reported as unknown
  - Cause, Consequence, Response



# Psychological distance

# THE SCIENCE NEWS CYCLE

JORGE CHAM © 2009

Start Here

## Your Research

Conclusion: A is correlated with B ( $p=0.56$ ), given C, assuming D and under E conditions.



...is translated by...

## UNIVERSITY PR OFFICE (YES, YOU HAVE ONE)

FOR IMMEDIATE RELEASE:  
SCIENTISTS FIND  
POTENTIAL LINK  
BETWEEN A AND B  
(UNDER CERTAIN CONDITIONS).



...which is then  
picked up by...

## NEWS WIRE ORGANIZATIONS

A CAUSES B, SAY  
SCIENTISTS.



...who are  
read by ...

## THE INTERNETS

Scientists out to kill us again.

POSTED BY RANDOM DUDE

Comments (377)

OMG! i kneeww itt!!

WTH???????



...then noticed by...

We saw it on a Blog!

A causes B all the time  
What will this mean for Obama?

BREAKING NEWS BREAKING NEWS BREA



## CNC Cable NEWS

...and caught  
on ...

## 4 LOCAL EYEWITLESS NEWS

WHAT YOU DON'T  
KNOW ABOUT "A" ...  
CAN KILL YOU!  
MORE AT 11...



...eventually  
making it to...

YOUR GRANDMA



WWW.PHDCOMICS.COM

# Social Amplification of Risk



- Why do improbable and insignificant risks get blown out of proportion?
- Why do probable and significant risks get ignored?
- Risks get amplified and attenuated when they are sent, transmitted, received



# Some Goals of **RISK COMMUNICATION**

*(FDA 2011)*

- Share information
- Change beliefs
- Change risk perceptions
- Change behaviors



# Questions?

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