Cornell University

Lessons from the "Science of Science Communication"

Bruce V. Lewenstein
Professor of Science Communication
Departments of Communication and of
Science & Technology Studies
Cornell University

MODEL 1: Knowledge Deficit | MODEL 2: Public Engagement with Science | MODEL 3: Science Communication as Political Communication

SciSciCom-I (2012, published 2013)

- Decision sciences, to identify what people need to know
- Behavioral sciences, to understand how people process information
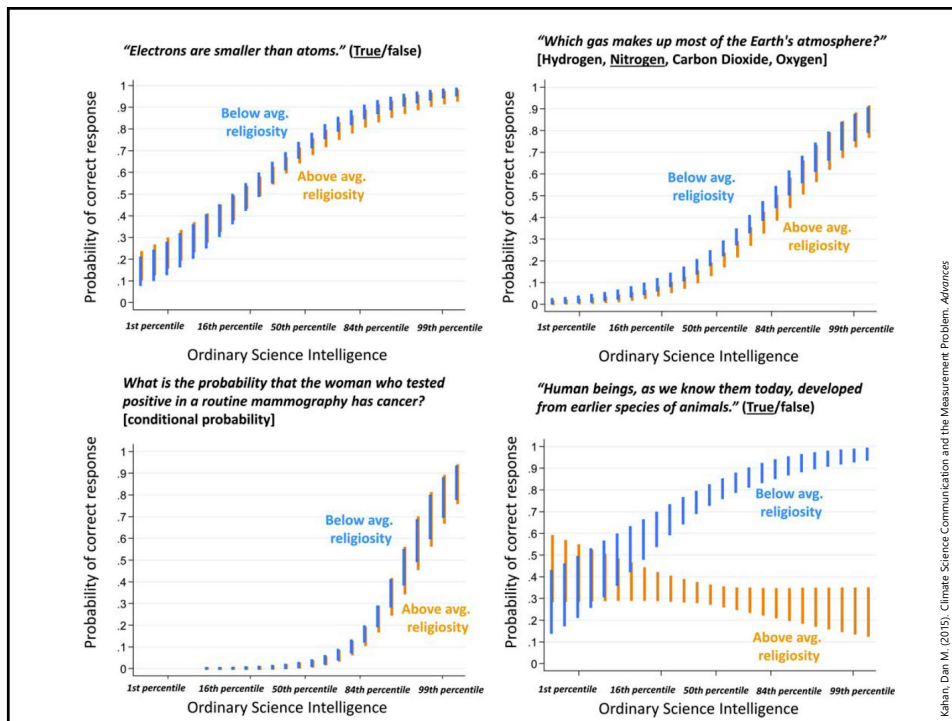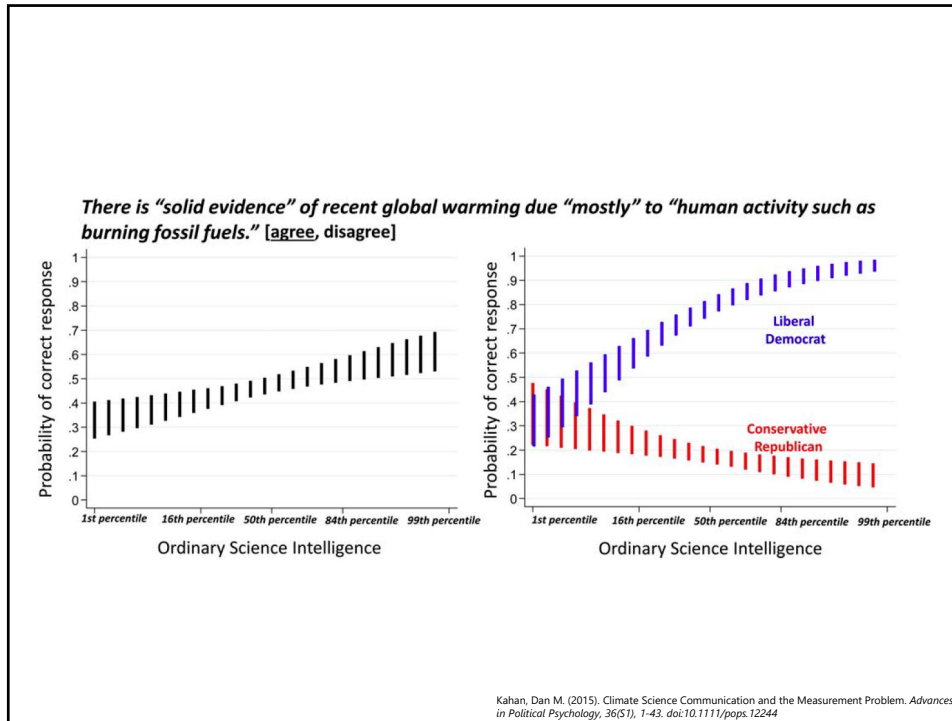- Social sciences, to understand social context

Cornell University

Selected findings

◆ Emotion matters: use materials that speak directly to emotional triggers

◆ Source credibility matters: emphasize shared interests and relative expertise (not just one)

◆ Frames matter

◆ Previous beliefs matter: people interpret new information in light of pre-existing beliefs

Cornell University

There is "solid evidence" of recent global warming due "mostly" to "human activity such as burning fossil fuels." [agree, disagree]

Kahan, Dan M. (2015). Climate Science Communication and the Measurement Problem. *Advances in Political Psychology, 36(S1), 1-43. doi:10.1111/pops.12244*

Cultural cognition

◆ People interpret information in cultural context (they don't want to resist their own culture)

◆ Emotional and cognitive dynamics systematically shift risk perceptions away from rational analysis

Cornell University

SciSciCom-II (2013, published 2014)

- Science controversies
- Trust
- Narrative
- Message design

Cornell University
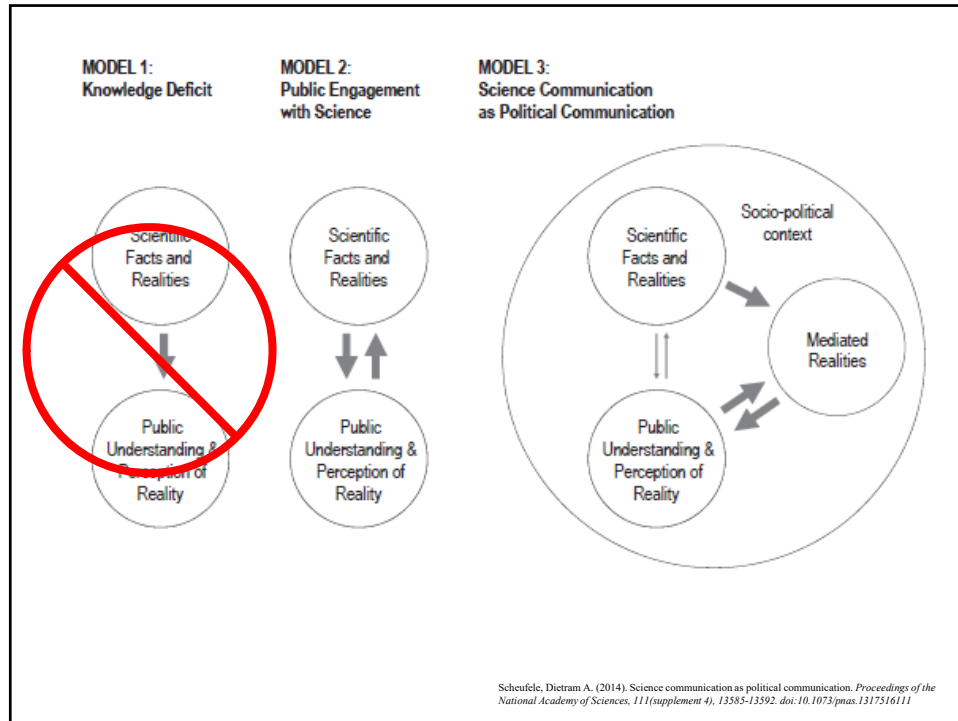
Science controversies

- Science necessarily engages social issues. Thus it serves some political, economic, social interests more than others. That generates controversy.
- Dealing with controversy requires trust

Cornell University

MODEL 1:
Knowledge Deficit

MODEL 2:
Public Engagement
with Science

MODEL 3:
Science Communication
as Political Communication

Scientific Facts and Realities

Public Understanding & Perception of Reality

Socio-political context

Mediated Realities

Scheufele, Dietram A. (2014). Science communication as political communication. *Proceedings of the National Academy of Sciences, 111(supplement 4), 13585-13592. doi:10.1073/pnas.1317516111*

Trust, 1

◆ Always making judgments in absence of full information.

◆ Trust comes from openness, warmth (personal characteristics)

◆ Keep non-partisan focus, including presenting honestly alternative policy choices
  – Policy relevant but not policy prescriptive

Cornell University

Trust, 2: Social influence

◆ Reciprocity (return a favor)
◆ Commitment and consistency (stick with decision)
◆ Social proof (do what others are doing)
◆ Authority (obey authority figures)
◆ Liking (eases persuasion)
◆ Scarcity (generates demand)

Cornell University

Narrative

◆ Fundamental role of story-telling in human condition
◆ Cognitive AND emotional responses
◆ Role of intuitive cognitive epistemologies in shaping response to stories

Cornell University

Message design: specific

◆ Importance of direct, actionable messages
◆ Use of social networks (not just electronic ones)
◆ Graphic design: key principles
◆ Identify needs, design, deliver, assess; repeat

Cornell University

Message design: concepts

◆ Presenting uncertainty: for persuasion and for nonpersuasion settings
◆ Virality: stories about science have greater staying power when they are interesting, surprising, useful, personal, and emotional

Cornell University

Can we apply these principles?

◆ What is the news?

◆ How handle controversy?

◆ Can you tell a story?

Cornell University

Can we apply these principles?

◆ What is the news?

◆ How handle controversy?

◆ Can you tell a story?

Cornell University

Can we apply these principles?

◆ What is the news?
◆ How handle controversy?
◆ Can you tell a story?

You tell me!

Cornell University

What about your own work?

◆ Scientists: Write a tweet (140 characters) about your work
◆ Journalists: Write a tweet about your favorite recent science story

◆ Again, what is relevant from SoSC?

Cornell University

Tell a story

- ◆ Beginning, middle, and end
- ◆ Focus on the human (could be a person affected by the science, could be the researcher)
- ◆ "…and…, but…, therefore…."

Cornell University

One approach: ABT

Cornell University

Conclusion

- There *is* a science of science communication
- It highlights issues of trust and democracy
- But how do we merge it with thinking about models?

Cornell University