

# Responsible Public Communication

## Baruch Fischhoff

Carnegie Mellon University

<http://www.cmu.edu/epp/people/faculty/baruch-fischhoff.html>

National Scientific Advisory Board for Biosecurity

Bethesda, MD

January 24, 2020

# Intuitions Are Unreliable

People overestimate how well they understand and communicate with one another.

# Some Varieties of Unreliable Intuitions

common knowledge effect

false consensus effect

fundamental attribution error

self-serving biases

myths (panic, adolescents' unique sense  
of invulnerability ...)

...

# Intuitions Are Unreliable

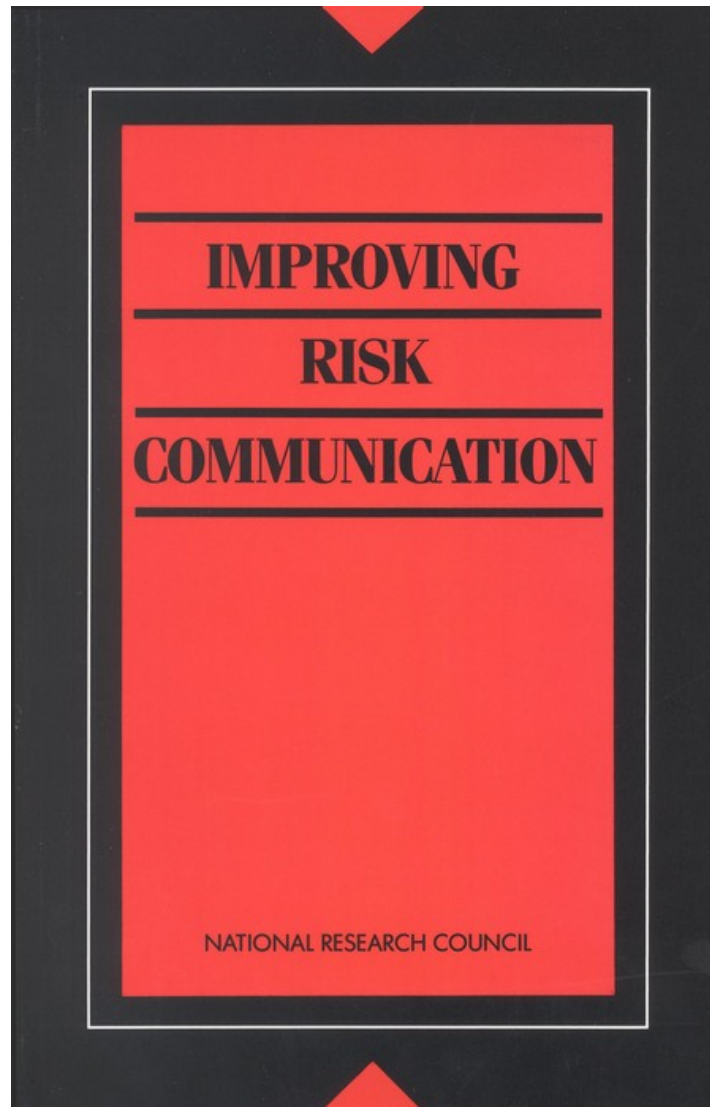
People overestimate how well they understand and communicate with one another.

As a result, we should rely on evidence, rather than intuition, in designing communication processes.

# The Basic Science Is Mature

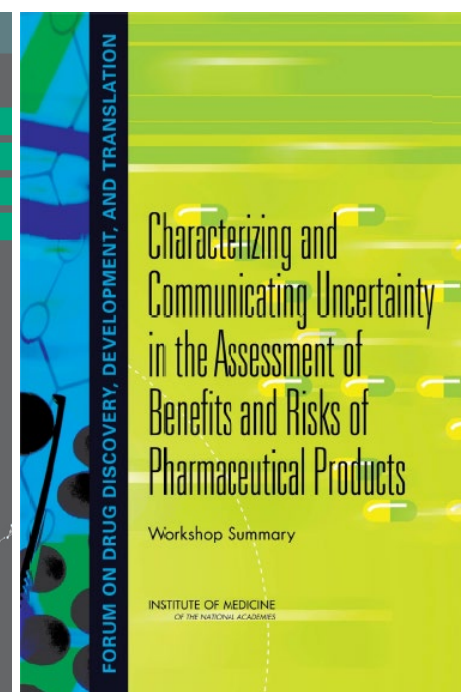
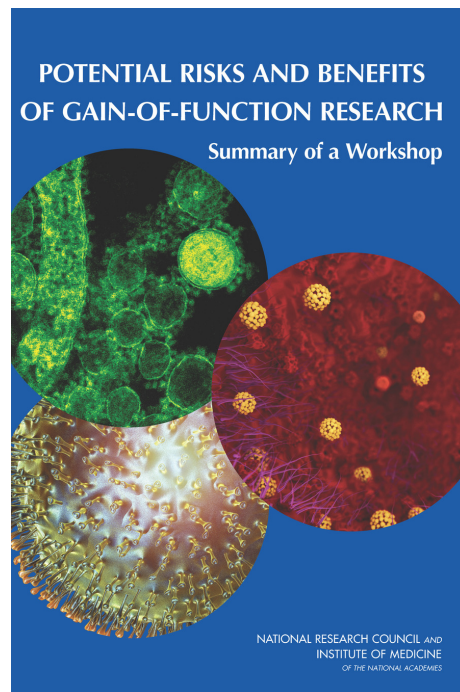
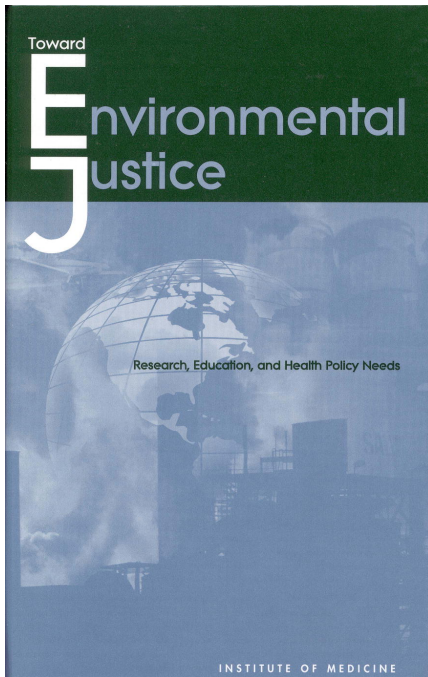
Constituent processes have been studied by the social, behavioral, and decision sciences, for many years.

# Risk Communication at NASEM



<http://www.nap.edu/catalog/1189.html> (1989)

# Risk Communication at NASEM



<http://www.nap.edu/catalog/6034/>

<http://www.nap.edu/catalog/21666/>

<https://www.nap.edu/catalog/24738>

<http://www.nap.edu/catalog/18870/>

Supplement to

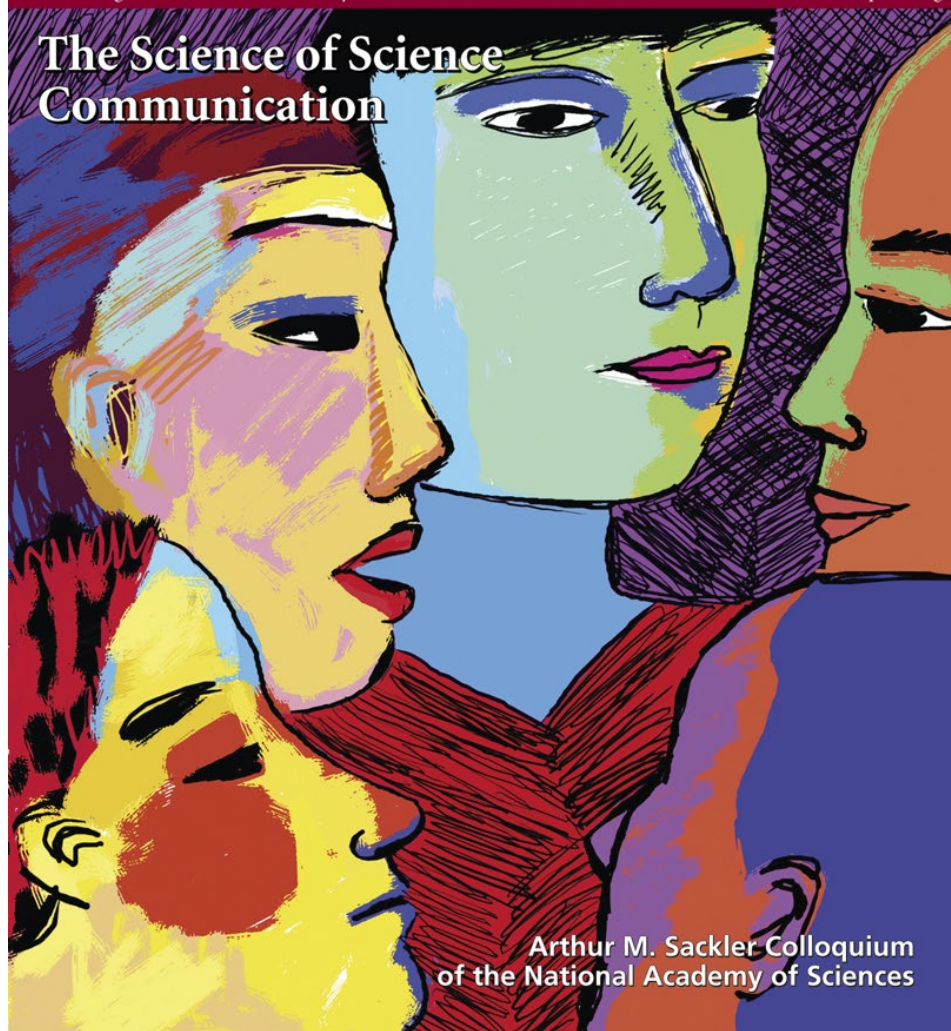
# PNAS

August 20, 2013 | vol. 110 | suppl. 3 | pp. 14031–14110

Proceedings of the National Academy of Sciences of the United States of America

www.pnas.org

## The Science of Science Communication



Arthur M. Sackler Colloquium  
of the National Academy of Sciences

[http://www.pnas.org/content/110/Supplement\\_3](http://www.pnas.org/content/110/Supplement_3)  
<https://www.youtube.com/user/SacklerColloquia/videos>



Supplement to

# PNAS

September 16, 2014 | vol. 111 | suppl. 4 | pp. 13583–13672

Proceedings of the National Academy of Sciences of the United States of America

www.pnas.org

## The Science of Science Communication II



Arthur M. Sackler Colloquium  
of the National Academy of Sciences



Arthur M. Sackler

COLLOQUIA  
OF THE NATIONAL ACADEMY OF SCIENCES

- Information
- Summary
- Directions
- Partnership Awards



## The Science of Science Communication III: Inspiring Novel Collaborations and Building Capacity





Governance of Dual Use Research in the Life Sciences:  
Advancing Global Consensus on Research Oversight  
Zagreb, Croatia, June 10-13, 2018

**COMMUNICATING  
RISKS AND BENEFITS:**  
*An Evidence-Based User's Guide*

*Baruch Fischhoff PhD,  
Noel T. Brewer PhD, & Julie S. Downs PhD, editors*



<http://www.fda.gov/AboutFDA/ReportsManualsForms/Reports/ucm268078.htm>

# Each Chapter

Summarizes the science

Offers best guesses at practical implications

Shows how to evaluate communications

(<3000 words)

# **The Basic Science Is Mature**

Constituent processes have been studied by the social, behavioral, and decision sciences, for many years.

As a result, communication teams should include people with requisite expertise.

# Content Design is Straightforward

The design process applies basic science in an orderly way, extracting its relevant results and methods.

# Content Design Process

## *Analysis*

What specific decisions do people face?

## *Description*

How do they make them intuitively?

## *Intervention*

How can they be helped in making them?

## *Evaluation*

Are our current efforts good enough?

*Repeat, as necessary.*



# Some Applications

radon

pre-term birth

pharmaceuticals

climate change

phishing

breast cancer

nuclear incidents

tornadoes

xenotransplantation

smart meters

HIV/AIDS

...

sexual assault

intelligence analysis

EMF

avian flu

palliative care

breast implants

nuclear energy in space

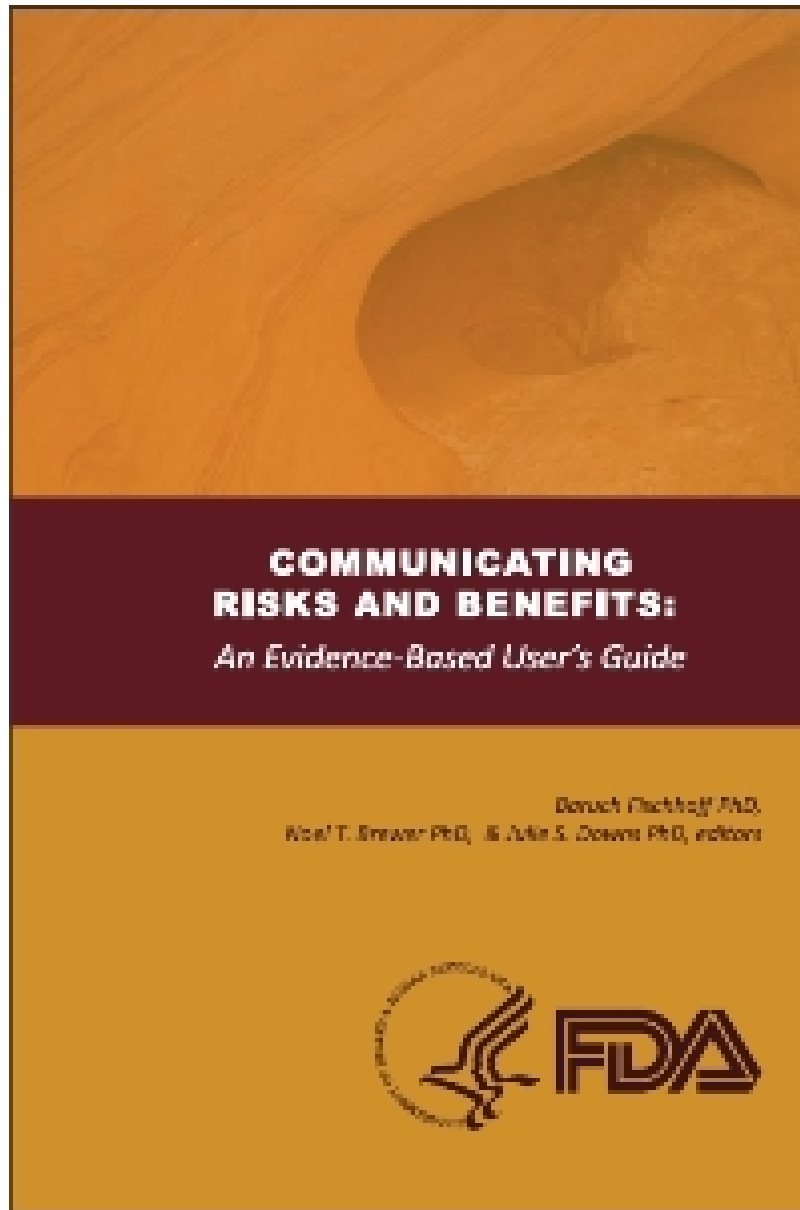
Plan B (morning after pill)

small modular reactors

vaccines (anthrax, MMR)

critical care medicine

...



<http://www.fda.gov/AboutFDA/ReportsManualsForms/Reports/ucm268078.htm>

# Each Chapter

Summarizes the science

Offers best guesses at practical implications

**Shows how to evaluate communications**

for no money at all

for a little money

for money commensurate with the personal,  
organizational, and political stakes riding on  
effective communication

# Requisite Expertise

Subject matter specialists for accuracy

Decision scientists for relevance

Social and behavioral scientists for mutual  
understanding

Practitioners for execution and local knowledge

# Requisite Expertise

Subject matter specialists for accuracy

Decision scientists for relevance

Social and behavioral scientists for mutual  
understanding

Practitioners for execution and local knowledge

All opinions are welcome, but authority is  
vested in those who know each topic best.

# Content Design is Straightforward

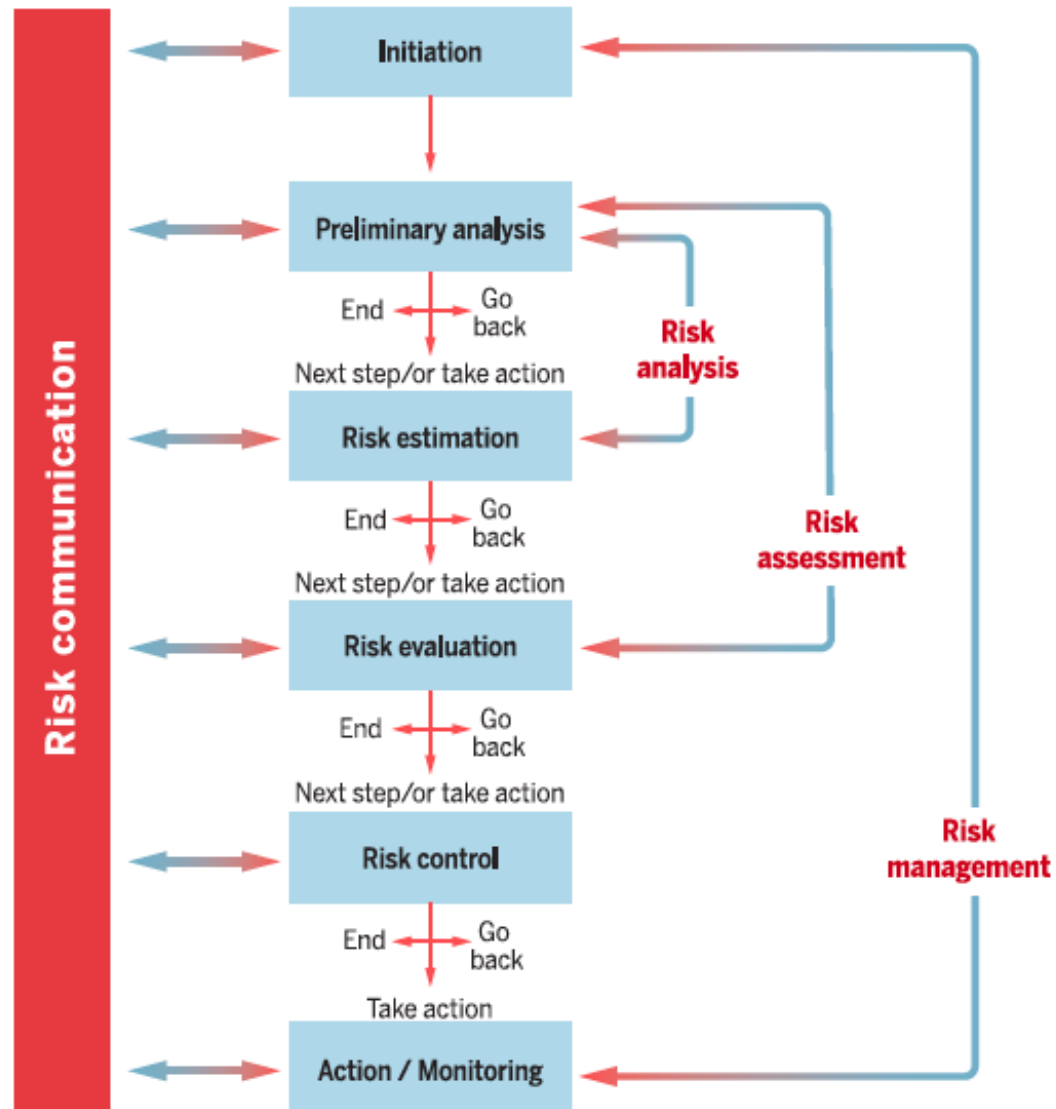
The design process mobilizes basic science in an orderly way, extracting its relevant results and methods.

As a result, communication teams need requisite expertise and coordination.

# Process Communicates

When and how an organization communicates (or stays silent) shapes how its messages are interpreted and how well it is trusted.

# A Communication Process Standard



Fischhoff, B. (2015). The realities of risk-cost-benefit analysis. *Science*, 350(6260), 527.  
<http://dx.doi.org/10.1126/science.aaa6516>



# FDA Risk Communication Advisory Committee (RCAC)

## **Charter of the Risk Communication Advisory Committee to the Food and Drug Administration**

### **Authority:**

The Advisory Committee on Risk Communication, referred to herein as the Risk Communication Advisory Committee, was established by 21 U.S.C. 360bbb-6, as added by section 917 of the Food and Drug Administration Amendments Act of 2007. The Committee is also governed by 21 CFR Part 14 and Pub. L. 92-463 (5 U.S.C. App.), the Federal Advisory Committee Act, which sets forth standards for the formation and use of advisory committees.

**FDA'S  
STRATEGIC PLAN  
FOR  
RISK COMMUNICATION**

**Fall, 2009**

<https://www.fda.gov/AboutFDA/ReportsManualsForms/Reports/ucm183673.htm>  
<https://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/RiskCommunicationAdvisoryCommittee/UCM526451.pdf>

# Recommendations for Managing Emerging Events

Have a consistent policy in all domains

Provide useful, timely information

Address: risks and benefits, uncertainty,  
personal actions, FDA actions

Audience needs should drive agency  
analyses

Use standard formats; evaluate routinely

Consider needs of diverse populations

# **The Voice of the Patient**

A series of reports from the U.S. Food and Drug Administration's (FDA's)  
Patient-Focused Drug Development Initiative

**Chronic Fatigue Syndrome and Myalgic Encephalomyelitis**

**Public Meeting: April 25, 2013**

**Report Date: September 2013**

# **The Voice of the Patient**

A series of reports from the U.S. Food and Drug Administration's (FDA's)  
Patient-Focused Drug Development Initiative

## **Sickle Cell Disease**

**Public Meeting: February 7, 2014**

**Report Date: October 2014**

# Process Communicates

When and how an organization communicates (or stays silent) shapes how its messages are interpreted and how well it is trusted.

As a result, communication should be treated as a strategic function.

# Bad News

Everyone is an intuitive communicator, leading to improvised content and processes.  
Without a strategic commitment, events overtake evidence-based communication.  
Organizations often lack absorptive capacity for social, behavioral, and decision science expertise.

# Good News

Broad and deep basic science.

Principles for addressing many recurrent issues.

Applications to many specific risks.

Costs are low; economies of scope are possible.

Primary barrier is institutional inertia.