

Humanizing Science to Build Trust and Advance Innovation

Dr. Eric S. Sachs
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**Gaining Societal Acceptance of Biotechnology:
The Case for Societal engagement**



WAGENINGEN UR
For quality of life

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Setting the stage...

*We've arranged a global civilization in which most crucial elements profoundly depend on science and technology. **We have also arranged things so that almost no one understands science and technology. This is a prescription for disaster.** We might get away with it for a while, but sooner or later this combustible mixture of ignorance and power is going to blow up in our faces.*

Carl Sagan 1995

The Demon-Haunted World: Science as a Candle in the Dark



The Buzz...

Beware GMOs; they set you up for Cancer

'GMOs... Savior Seeds?' – episode of VICE on HBO

From breast milk to breakfast cereal, tests increase for Roundup ...

New Study Links Roundup to Diabetes, Autism, Infertility

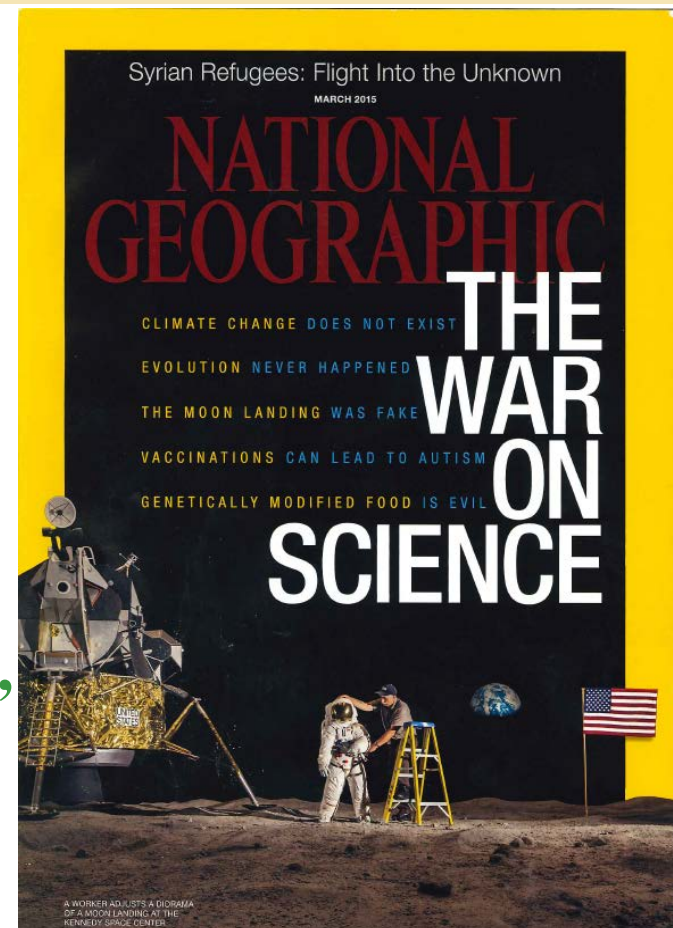
How GMO Foods Feed Junk Food Profits – Not The World

Leading to obesity, diabetes, and more

Chipotle to Stop Using Genetically Altered Ingredients

MIT Researcher States that Half of All Children May be Autistic by 2025 MSNBC International

USDA SUED FOR VIOLATING FOIA, DENYING AMERICANS THE RIGHT TO KNOW THE HARMFUL EFFECTS OF GMOS



Science and public are at odds...

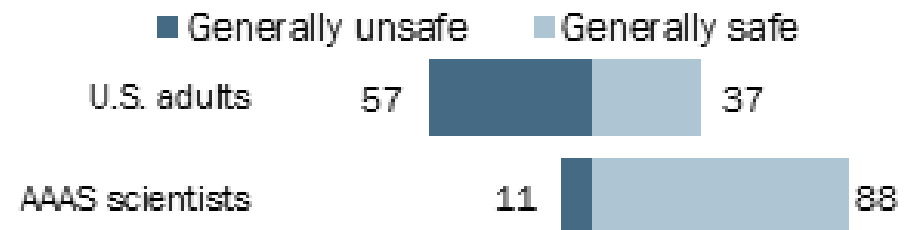
“...intuitions and emotions make the mind highly susceptible to particular negative representations of GMOs.”

Blancke et al. 2015

**PEW Institute
Research Center
(2015)**

Eating Genetically Modified Foods

% of each group saying it is generally safe or unsafe to eat genetically modified foods



Survey of U.S. adults Aug. 15-25, 2014. Q38. AAAS scientists survey Sept. 11 - Oct. 13, 2014. Q28 Those saying don't know or giving no answer are not shown

PEW RESEARCH CENTER

We can communicate better...

Key questions...

- Why are people concerned about GMOs when there is a great deal of evidence validating benefits and safety?
- Why do some people believe GMOs may be unsafe and harmful to the environment?
- What drives human behavior and biases –our own included?
- What do we need to do to reach audiences in meaningful ways?

The bottom line...

Our communication can't only be about science and facts; we need to be human too.

Persistent misinformation can have serious societal consequences...

"It is a truism that a functioning democracy relies on an educated and well-informed populace.

The processes by which people form their opinions and beliefs are therefore of obvious public interest, particularly if major streams of beliefs persist that are in opposition to established facts.

If a majority believes in something that is factually incorrect, the misinformation may form the basis for political and societal decisions that run counter to a society's best interest; if individuals are misinformed, they may likewise make decisions for themselves and their families that are not in their best interest and can have serious consequences."

Source: *Misinformation and Its Correction: Continued Influence and Successful Debiasing*. Lewandowski et al. (2012)

The costs of our beliefs and behaviors

- Beliefs are “held strongly with forceful and infectious conviction”

Lewandowsky et al. 2012

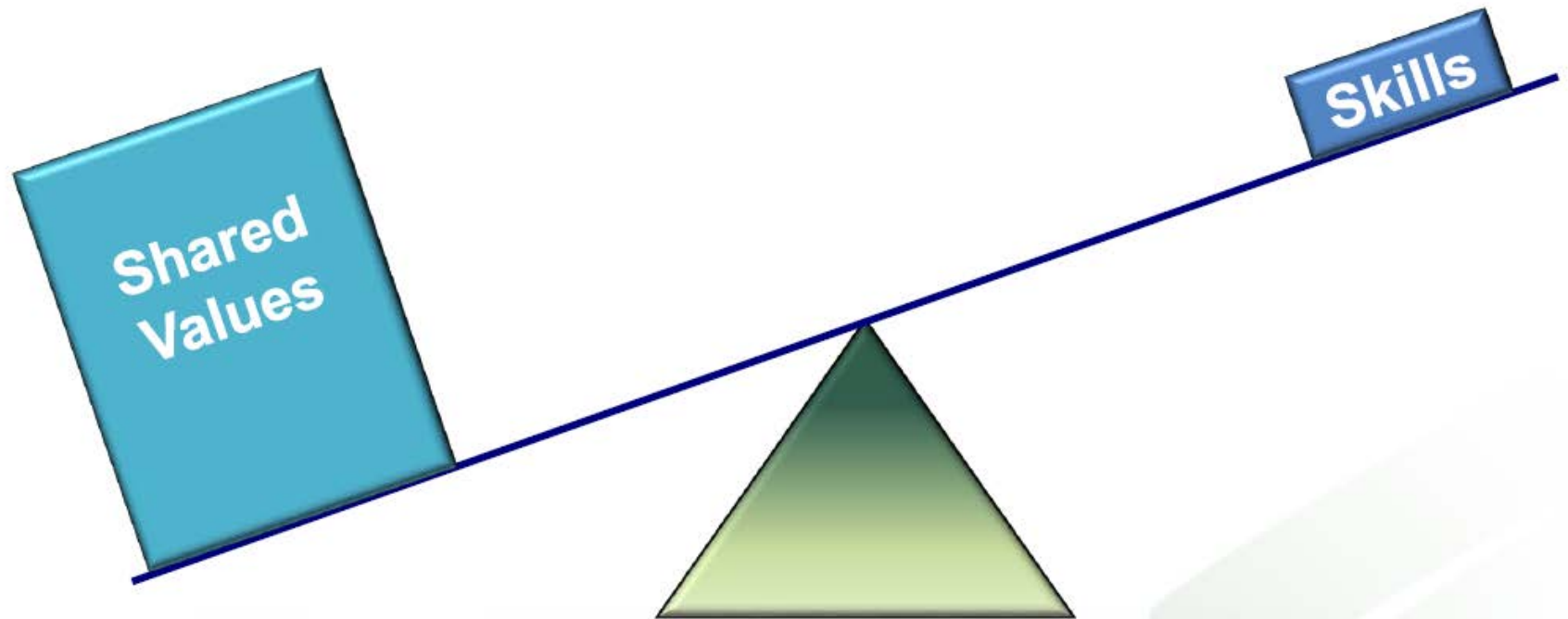
- The risk response: perceptions of risk are more about *feelings* and *instincts*

Ropeik 2014; Kahneman 2012

“Sometimes the fear can become pathogenic, instigating bad public policy, with negative effects for everyone.”

McHughen and Wager 2010

Our communication can't only be about science and facts; we need to be human too



Shared values are 3-5X more important in building trust than demonstrating competence



Trust research was published in December, 2009 – *Journal of Rural Sociology*

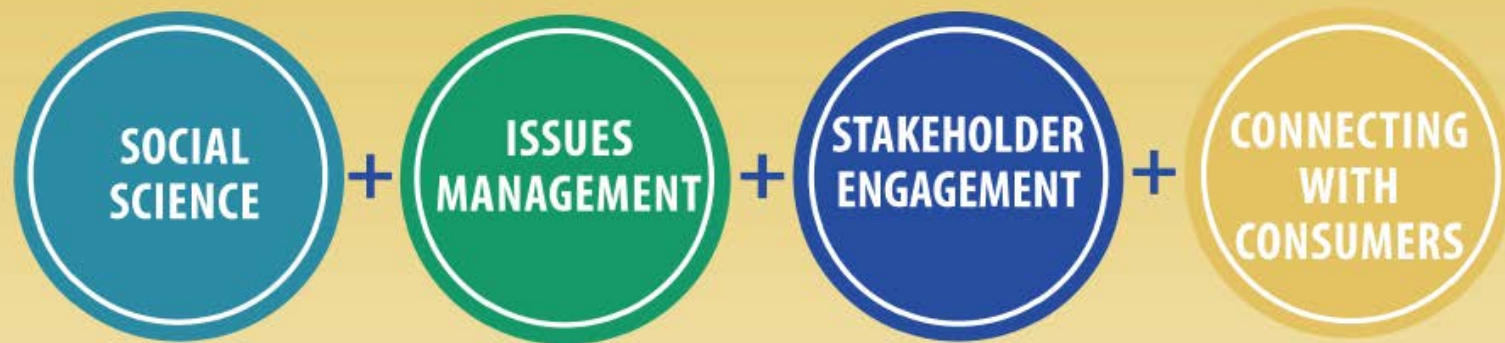
Consumers have a direct impact on private sector ability to operate

“No longer is it sufficient to rely solely on science or to attack our attackers as a means of protecting self-interest. Today’s consumer environment requires new ways of engaging the public and new methods of communicating if we want to build trust, earn and maintain social license, and protect our freedom to operate.”

- *The Center for Food Integrity*

A NEW CONVERSATION ABOUT FOOD

A NEW AND INNOVATIVE APPROACH WHERE...



BUILDS **SHARED BELIEF** AMONG...



...THAT TODAY'S FOOD SYSTEM IS **CONSISTENT**
WITH THEIR **VALUES** AND WORTHY OF THEIR **TRUST**.

Monsanto's approach has changed...

BEFORE



FOCUSED ON BUSINESS PARTNERS,
CUSTOMERS, EMPLOYEES,
SHAREHOLDERS

LET THE SCIENCE SPEAK
FOR ITSELF

ENGAGED ONLY AS NEEDED

NOW



CONTINUED FOCUS ON CUSTOMERS,
EMPLOYEES AND SHAREHOLDERS WITH **MORE**
FOCUS ON CONSUMERS

FOCUS ON FINDING SHARED VALUES, STORY
TELLING AND CONVERSATION

ENGAGING IN NEW VENUES WITH NEW
AUDIENCES TALKING ABOUT SUSTAINABILITY,
COLLABORATION, FOOD AND SAFETY

We are talking about dialogue...

THE **BLOG**

Featuring fresh takes and real-time analysis from
HuffPost's signature lineup of contributors

HOT ON THE BLOG

Benjamin Todd J
Gordon Brown



**Dr. Robert T.
Fraley**

*Executive Vice President and Chief
Technology Officer, Monsanto*

GET UPDATES FROM DR. ROBERT T. FRALEY



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The Future of Agriculture Requires Dialogue

Posted: 12/30/2013 1:41 pm



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It's a great honor to have shared in the World Food Prize this year with two of my longtime friends, Dr. Marc Van Montagu, of Belgium, and Dr. Mary-Dell Chilton, of the United States. But it will be a far more important honor if the decision to honor the three of us helps reset the discussion around innovation in agriculture.

We are engaging the critics...

Does a popular herbicide cause cancer?



We are showing who we are...

Research

intelligence²
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"ALWAYS INTELLIGENT AND
PROVOCATIVE, AS WELL AS
DISCIPLINED AND CIVIL."

- THE WALL STREET JOURNAL

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GENETICALLY MODIFY FOOD

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DEBATE DETAILS

THE PANEL

RESULTS

THE RESEARCH

VIDEO / AUDIO



Illustration by Thomas James

WEDNESDAY, DECEMBER 3, 2014

Genetically modified (GM) foods have been around for decades. Created by modifying the DNA of one organism through the introduction of genes from another, they are developed for a number of different reasons—to fight disease, enhance flavor,



FOR
Robert Fraley
Executive VP & Chief
Technology Officer,
Monsanto



FOR
Allison Van Eenennaam
Genomics and
Biotechnology
Researcher, UC Davis



AGAINST
Charles Benbrook
Research Professor,
Center for Sustaining
Agriculture and Natural
Resources



AGAINST
Margaret Mellon
Science Policy Consultant
& Fmr. Senior Scientist,
Union of Concerned
Scientists



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We are making new allies...

Bill Nye visits Monsanto and changes his mind on GMOs



We are reaching out to consumers...



[Discover Us](#) [The Conversation](#) [Sustainability](#) [Balanced Meal](#) [News Feed](#)

BE PART OF
THE
Conversation

Is Monsanto involved in trying to find the cause or a solution to the ongoing bee problem?

What is Monsanto's position on helping consumers fully understand the things they eat?

Ask a Question

Sustainable Solutions for Every Plate

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Welcome. Discover more about us.

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Eric Sachs @ericsachsPhD · Oct 2

Why does Monsanto work with academics?
monsantoblog.com/2015/10/02/why...
career path is a personal decision.



Eric Sachs @ericsachsPhD · Oct 19

Coordination between public and private sectors is essential to the maturation of new ideas. shar.es/1uZva3 @sharethis @ScienceAly

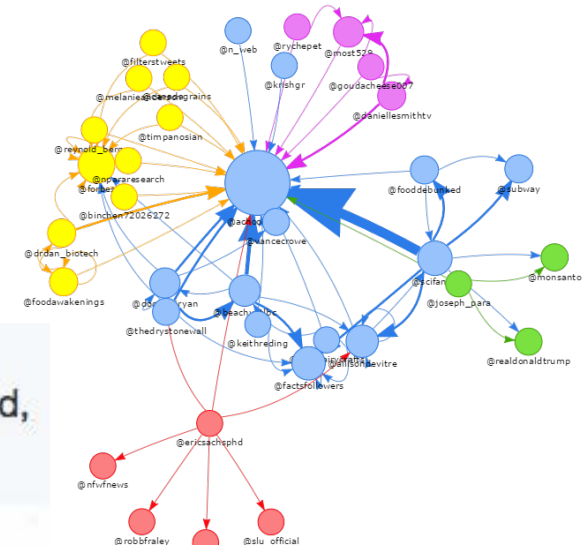


Eric Sachs @ericsachsPhD · Nov 12


What is the cost? "science be damned, the economy be damned, other benefits be damned." bit.ly/1NtjPFw



And We're Tweeting...



The Brave New World of Science Communication



Public Interfaces of the Life Sciences

When Science and Citizens Connect: Public Engagement on Genetically Modified Organisms

A Workshop of the Roundtable on Public Interfaces of the Life Sciences

January 15-16, 2015

National Academy of Sciences

2101 Constitution Avenue, NW, Room 120, Washington, DC

Key Points

1. People do not listen to scientists naturally
2. The public trusts scientists
3. Explaining science better is not the answer
4. More information does not lead to agreement
5. Need to simplify messages
6. Decisions are not always based on critical thinking; people take cognitive 'short cuts' (motivated reasoning)
7. People seek out people that think like them
8. People look for information that supports their beliefs (conformation bias)
9. Personal values and contexts matter and they vary around the world



Key Points

10. People frame everything
11. GMOs have been framed negatively and many persons have not engaged
12. Pure scientists don't exist and science arbiters essentially are issue advocates
13. "We have met the enemy and he is us¹". We are members of society and we need to be aware that we are just like everyone else.
14. If you swim, you are going to get wet
15. Find the smartest person that disagrees with you and talk to them

¹ Walt Kelly 1971



Questions?

