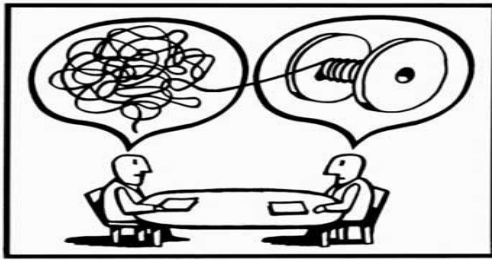


## The Public Communication of Science



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## Science and Society

- Science is important
  - Learning and discovery
- For the general public
  - Environment
  - Health
  - Technology
  - Democracy



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## Responsible Citizenry and Informed Decision-making

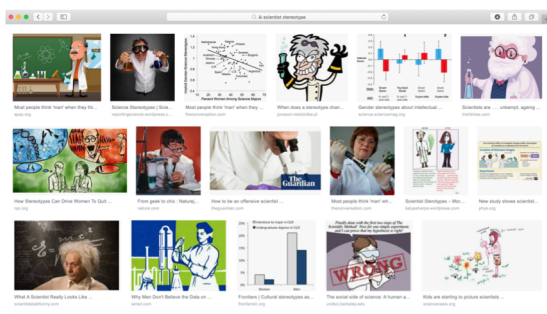
- Important to know about
  - Effect of GH gases on climate (Environmental Impact)
  - Technology on Fuel and Energy efficiency (Economic Impact)
  - Which politicians support evidence-based policies and not ideology (Political Impact)
  - Being supportive of research and exploration (Academic Impact)



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## Google Images: Scientist Stereotype



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## Scientists' Public Communications



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## Climate Change Denial

**NO SCIENTIFIC PROOF** **THE REAL STORY**  
/FOX NEWS/ FDA PROPOSES NEW

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## Belief as False Knowledge

**Do you believe humans are responsible for climate change?**

Yes	87%
No	13%

EVERY TRADING DAY

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## Biotechnology and GMOs

Séralini et al., 2012

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## Academic Fraud by Gilles-Éric Séralini

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## Is Genetically Modified Food Safe?

The scientific consensus around the safety of genetically modified foods is as strong as the scientific consensus around climate change. These foods are subjected to more testing than any other, and everything tells us that they're safe.

www.axiamundionline.com

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## Golden Rice and Vit A Deficiency

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## Vaccines and Public Health



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## Academic Fraud by Andrew Wakefield



**RETRACTED**

**1998**

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## Additions and Adjuvants

**Thimerosal USP/BP/EP**

2- [(ethylmercury) thio] benzoic acid, sodium salt.  
 Acido 2- [(etilmercuro) tio] benzoico, sal sódica.

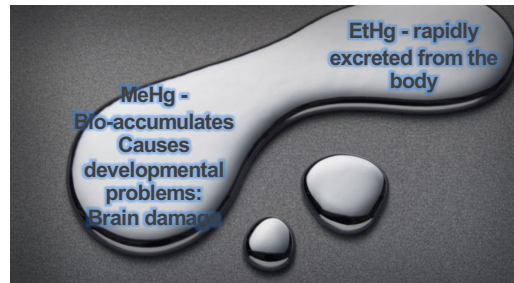
$2-(C_2H_5HgS)C_6H_4COONa$   
 $C_{10}H_9HgNaO_2S$   
 FW: 404,81  
 CAS [54-64-8]

Manufacture Date: Apr. 2009  
 Expiry Date : Apr. 2014  
 Batch N° : 000530

Net weight **5 Ka**

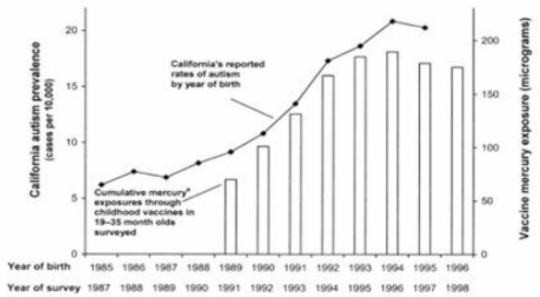
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## Methyl vs. Ethyl Mercury



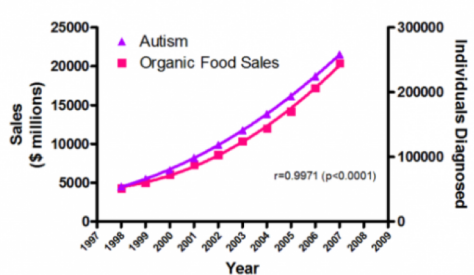
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## Correlation: Autism and Vaccines



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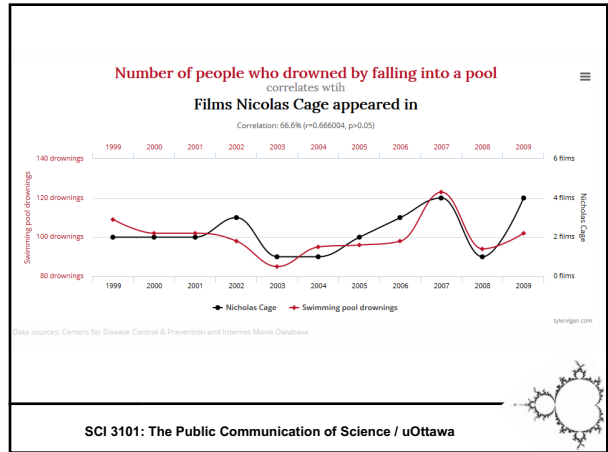
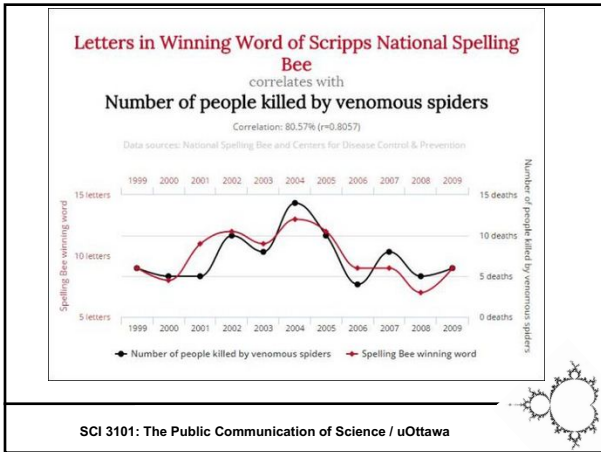
## The real cause of increasing autism prevalence?



Sources: Organic Trade Association, 2011 Organic Industry Survey; U.S. Department of Education, Office of Special Education Programs, Data Analysis System (DANS), OMB# 1820-0043. \*Children with Disabilities Receiving Special Education Under Part B of the Individuals with Disabilities Education Act

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### Consequences on Public Health

#### MEASLES OUTBREAK

14 STATES  
JANUARY 1 - JANUARY 28

MEASLES OUTBREAK  
THOUSANDS POSSIBLY EXPOSED IN NEW YORK

#### MEASLES CASES

BC 320 SK 11  
AB 1 MB 2 ON 11

#### MUMPS OUTBREAK

- 152 Cases in Spokane County
- 91 People Vaccinated
- 28 Schools in 3 Districts
- Third Wave Of Infections

#### BBC NEWS WALES

Swansea measles epidemic: Case numbers up to 569

The number of confirmed cases of measles in the Swansea region has risen to 569, the highest since 1998, health officials said.

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### Homeopathy and Magical Potions

HOMEOPATHY  
it may seem prettier, but it's still just water.

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### Like Cures Like

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### Potentialization

Natural Substance → 1 Drop → Mother Tincture → 1 Drop → 1C → 1 Drop → 2C → 1 Drop → 3C → 1 Drop → 4C

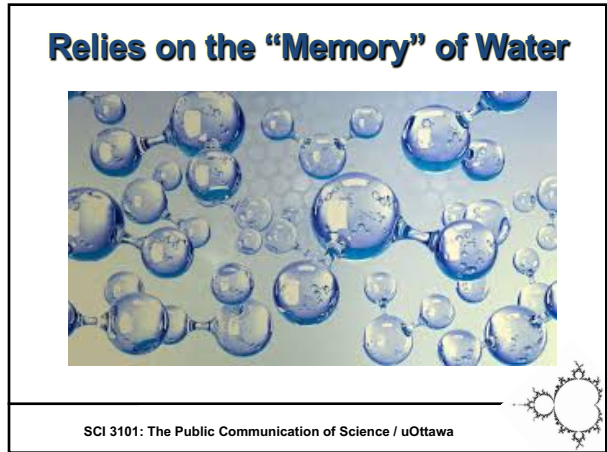
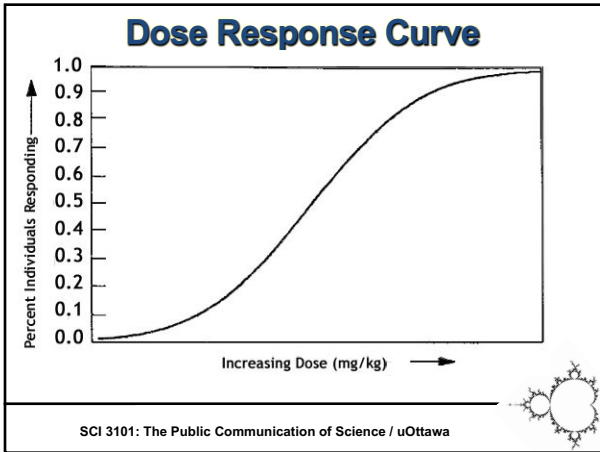
More Potent, More Dilute

Each vial is shaken vigorously after each dilution is made.

### The Law of Infinitesimals

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### Communication and Academia

- Intra-disciplinary communication
- Inter-disciplinary communication
- Pedagogy
- Communication to the Public

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### Communicating Science

a) among specialists

- Introduction and context
- Materials and methods
- Results
- Discussion and importance

General

Specific

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### Communicating Science

b) to non-specialists

- Bottom line take-home message, why am I here?
- So what?
- Background information and context

Specific

General

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## Communication 101

- Know your audience
- Speak to your audience

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## Who are 'The Public'?

- Made up of many different special interest groups, demographics, societal sectors

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## Framing for a Diversity of Audiences

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## Lose the Jargon



Scientific Term	What the public hears	Better Choice
Theory	Hunch, speculation	Scientific understanding
Positive trend	Good trend	Upward trend
Values	Ethics, monetary value	Numbers, quantity
Manipulation	Illicit tampering, cheating	Data processing
Positive feedback	Good response, praise	Self-reinforcing cycle

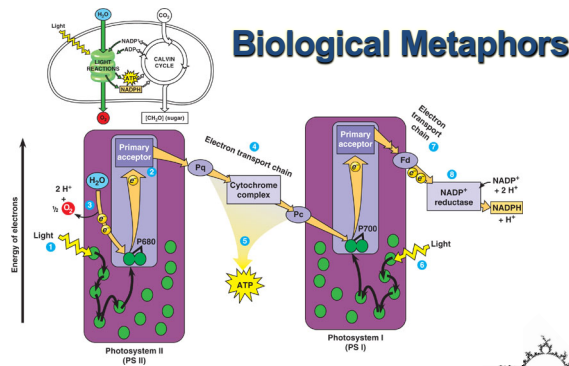
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## The Power of the Metaphor



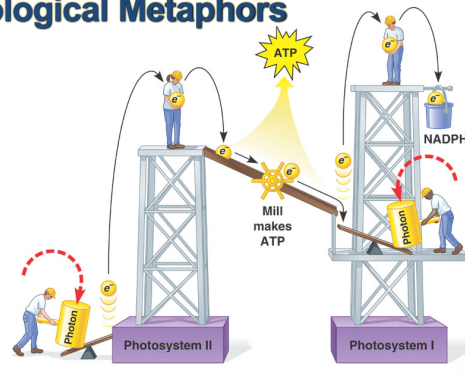
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## Biological Metaphors



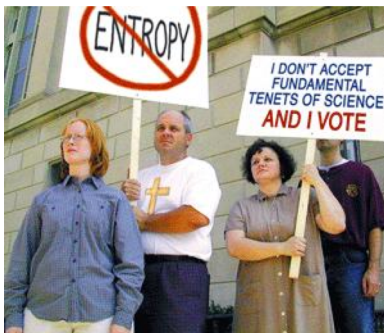
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## Biological Metaphors



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## We've Got Our Work Cut Out



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