Science vs. Politics

- **Ideal:**
  - Scientists study, discover & report findings
  - Public & politicians consider their input

- **Reality:**
  - Some people & politicians distrust scientists
  - People reject scientific findings even when consensus exists among scientists

- **Why?**

Science vs. Politics: the Problem

- **Americans don’t know much about science:**
  - Beyond the basics that are covered in K-12, knowledge levels are low
- **Business/advocacy groups have incentives to persuade:**
  - Business: Our product is safe or safely made
  - Critics: Products are risky; production is unsafe
- **People are susceptible to persuasion**
  - PR campaigns work

Sources of Public’s Knowledge about Science

- **School**
  - Education is limited
  - Many students do not complete H.S. or college
  - Social science/humanities students avoid science
  - Few technical issues are covered in school
    - BPA vs. BPS (Bisphenol A vs. Bisphenol S)
    - Older people were in classrooms long ago
      - e.g., Global warming didn’t get attention until 1988
      - So if born after 1968 (age > 48 = 48% of pop.), nothing

Sources of Public’s Knowledge about Science

- **Mass media**
  - Science journalism is limited
  - The media’s job is not to teach science
  - They report on cutting edge issues
    - The 5-second rule doesn’t work
    - Zika, Ebola


- **Peter Duesberg**
  - Some scientists argue that HIV does not cause AIDS, but is a passenger virus
Sources of Public's Knowledge about Science

- **School**
  - Limited coverage
  - Depends on major if students attend college

- **Mass media**
  - Not much science content
  - Few opportunities to learn
  - People need to look elsewhere for information

Science vs. Politics: the Problem

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Sources of Public Scientific Knowledge

- **Corporations**
  - Advertisements, news releases, sponsored activities

- **Policy advocacy groups**
  - Publications: books, magazine articles, op/eds
  - “Experts” to respond to media inquiries

- **Politicians**
  - When our leaders tell us about science, we tend to believe them

- **Why would they mislead us?**

Reasons for Disagreeing with Science 1

- **Business Profits**
  - Corporations want to sell products that *are* risky or unhealthy
  - Tobacco companies began attacking scientific studies showing that smoking causes cancer and other diseases in the 1950s
  - They demonstrated that anti-science campaigns work

  — See Naomi Oreskes and Erik Conway, *Merchants of Doubt*
Reasons for Disagreeing with Science 2

• Business Profits
  – Corporations want to sell products that the public believes are risky or unhealthy
  – Genetically modified food (GMOs)
  – Vaccines

Reasons for Disagreeing with Science 3

• Even if genuinely risky,
  – Business leaders/Advocates may believe their own propaganda
    • People believe “facts” that are consistent with their values and self-interest
  – “Cognitive dissonance” reduction

Cognitive Dissonance Theory

**Reasons for Disagreeing with Science**

- **“Motivated reasoning”** is an emotion-biased decision-making style
  - People make snap judgments often using simple heuristics
  - People then infer justifications for their behavior to reduce cognitive dissonance


- **Cognitive Dissonance/Motivated Reasoning**
  - Least likely to believe that smoking causes cancer: Smokers
  - Least like to believe that Nader’s 2000 campaign gave victory to George Bush: Ralph Nader

**Reasons for Disagreeing with Science**

- **Business Profits, but ...**
  - Some risky products can be justified
    - It’s a free country, why can’t people smoke if they want?
    - Lots of jobs will be lost if we end tobacco sales
  - Profit motives don’t necessarily make them bad

  - Same point can be made about marijuana (Prop. 64)

**Aside: Accusations of Hypocrisy**

- A common charge in politics is that one’s opponent is a hypocrite
- I suggest an alternative view:
  - Some may be hypocrites (e.g. tobacco firms)
  - They may believe what they say
  - They may be right; (you might be wrong)
  - They may justify it based on different views of gov’t (e.g., if you want to smoke tobacco or pot, it’s okay)

- Strategic suggestion:
  - Making the accusation may harm your cause

**Aside: Accusations of Hypocrisy**

- Huge amounts of money are being spent to encourage skepticism of global warming science
  - 50 think tanks advocate skepticism (with corporate support)
  - 141 (at least) skeptical books published 1972-2005 with corporate support

Advocacy groups are on all sides
  – Vaccine Zombie

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People are susceptible to persuasion
  – PR campaigns work

Science vs. Politics: the Problem

Ideal:
  – Scientists study, discover & report findings
  – Public & politicians consider their input

Reality:
  – Schools & news media are limited sources for learning
  – Businesses & advocacy groups run PR campaigns

Implication:
  – Learning about science is similar to forming opinions

Science vs. Politics: the People Problem

“Climate Deniers” is a term used by environmental activists & academics
  – It is a loaded term

People are presented with conflicting messages
  – They are trying to figure out the truth

McGuire’s Stages of Persuasion

1. Exposure
2. Attention
3. Comprehension
4. Acceptance
5. Retention
6. Action

See John Zaller, The Nature and Origins of Mass Opinion

Receive-Accept-Sample (RAS) Model of Persuasion

We accept messages that are consistent with our values and prior beliefs
RAS Model of Persuasion

• As people become more knowledgeable:
  – Liberals increasingly accept liberal messages
  – Conservatives increasingly accept conservative messages

• We “learn” science from our political leaders
  – To a lesser extent from trusted advocacy groups, corporations, etc.

Cognitive Dissonance/Motivated Reasoning

• These arguments apply to politicians & bureaucrats also

Science vs. Politics in Government

• Ideal:
  – Scientists study, discover & report findings
  – Politicians & bureaucrats consider their input

• Reality:
  – Politicians & bureaucrats may reject scientific findings even when consensus exists among scientists
  – They believe they know better
  – They want to help their political allies

The Role of Science in Government

• Typical gov’t agency hierarchy:
  1. Political Appointees
     - e.g., Secretary of Energy, EPA Administrator
  2. Senior Executive Service (top civil service bureaucrats)
     - Pay & promotion partly depend on political evaluation
     - Does the person follow the president’s policy preferences?
  3. Career civil service
     - Most gov’t scientists are here

The Role of Science in Government

• Scientific studies conducted by career gov’t employees are subject to review by higher authorities

  – Political appointees & SES civil servants may have the authority to:
    • Prevent studies from being published
    • Require gov’t scientists to revise conclusions
    • Edit studies

• Political “authority” is limited
  – Too many scientific reports for political appointees to intervene & revise
  – Most political appointees respect scientists
  – Political appointees have to be careful about pushing too hard if they want to change reports
    • The scientists can respond by going public