SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

POLS 2390 SPRING 2012

SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

Two sides of government involvement in science and technology:

- **Policy regarding scientific progress:**
  - Promotion of science;
  - Regulation of science and technology to mitigate harmful side effects.
- **Science & technology for policy:**
  - Scientific findings to support need or direction of policy;
  - Technology as a means to achieve policy goals.

SCIENCE SUPPORTS POLICY

- Policy issues
- Tools of government
- Technocracy
- Role of experts

POLICY ISSUES

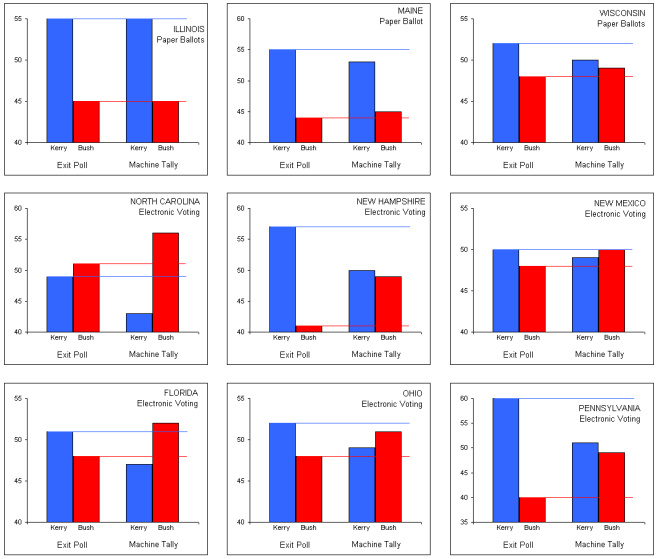
Many examples of scientific findings and technological development that support policy making:

Examples:

- **Climate change**
- **Public health**

Often governments:

- **Commission scientific and technological research to support policy**
- **Ask for advice on scientific or technological matters**
- **….even political science is used in the political process….**



SMALL CASE – PUBLIC HEALTH

What drives government involvement in health care?

- **Social issue?**
- **Economic issue?**
- **Ethical issue?**
- **Other frame?**

Does public health require government involvement?

How do science and technology support public health care?

VACCINES

http://www.pbs.org/wgbh/pages/frontline/teach/vaccine/

10 min

Should the government have the right to compel vaccination? Should parents have the right to refuse it?

POLICY TOOLKIT

Based on Kraemer:

- **Mission agencies (Manhattan Project)**
- **Facilities and laboratories (NASA)**
- **Federally funded R&D center (FFRDC's)**
  - e.g. Rand Corporation
- **Targeted programs (NNI)**
- **Science funding: NSF -> knowledge transfer**
- **R&D funding –> innovation diffusion programs:**
  - Targeted goals through:
    - Grants or
    - Tax incentives
- **Government procurement**
- **Education**
- **Legal framework: e.g. IP protection, patents, regulations.**

EXAMPLE FFRDC THINK TANK: RAND CORPORATION

RAND Mission: The RAND Corporation is a nonprofit institution that helps improve policy and decision-making through research and analysis.

RAND focuses on the issues that matter most such as health, education, national security, international affairs, law and business, the environment, and more.

Federally Funded Research and Development Centre.

- Non partisan
- Government funded
- Independent
- Originated in aviation industry
- Original research and on demand (DoD)

www.rand.org

READINGS

Pielke, Roger A. “Four Idealized Roles of Science in Policy and Politics” Chapter 1 in *The Honest Broker: Making Sense of Science in Policy and Politics*. Cambridge University Press, Cambridge UK (2007). ON BLACK BOARD *

Weinberg, Alvin M. “Can Technology Replace Social Engineering?” In Teich 11th ed. *

Kraemer, Sylvia “The Science and Technology Policy Toolkit.” Chapter 4 in *Science and Technology Policy in the United States: Open Systems in Action*. Rutgers University Press, New Brunswick NJ USA (2006) ON BLACK BOARD *

THE HONEST BROKER: MAKING SENSE OF SCIENCE AND POLICY IN POLITICS

Christina Reynolds

ROGER A. PIELKE, JR.

CHAPTER 1: FOUR IDEALIZED ROLES OF SCIENCE IN POLICY AND POLITICS

FOUR MAIN ROLES SCIENTISTS MUST CHOOSE FROM IN THE CONTEXT OF POLICY AND POLITICS IN A DEMOCRATIC SOCIETY:

1. Pure scientist • provides a report •

2. Science arbiter • answers factual questions •

3. Issue advocate • provides limited, focused information •

4. Honest broker of policy alternatives • provides info on every choice •

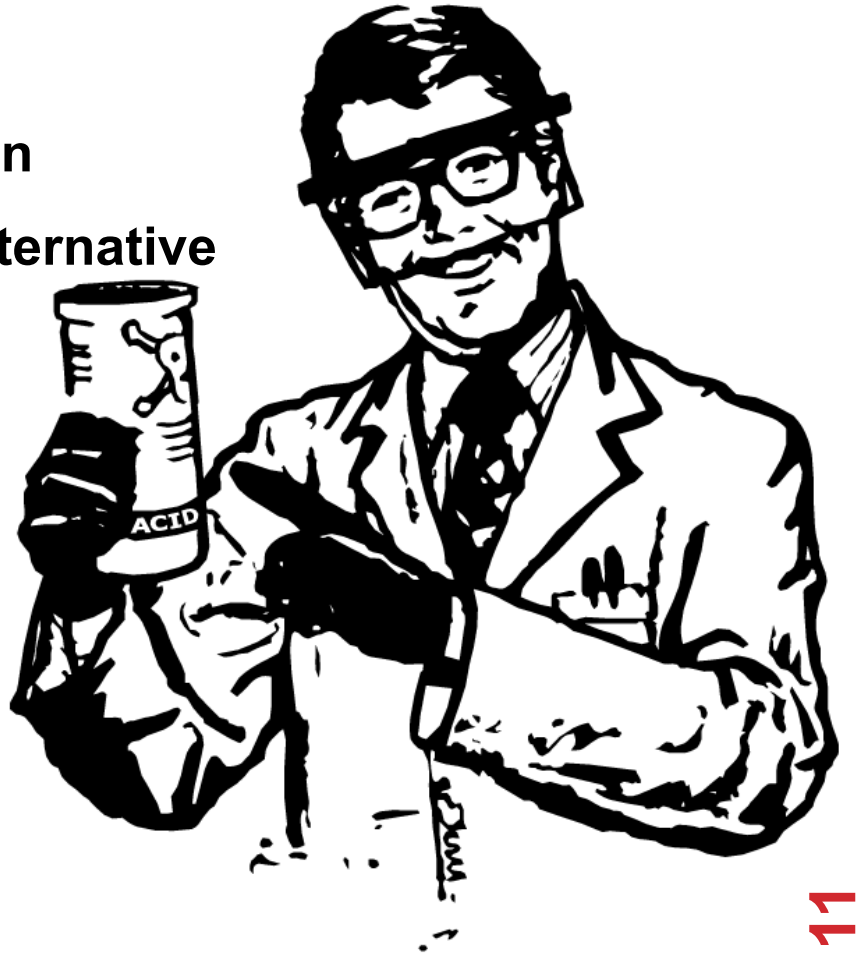
- Difficulties/risks with each role
- Any circumstances when objective guidance can be given independent of choice?
- Risk of stealth issue advocacy and bias, science being used to push agendas
- Honest broker as an ideal role for scientists to choose

EXPERTS

Based on Pielke:

1. **Pure scientist: no opinion**
2. **Science arbiter: answers question**
3. **Issue advocate: promotes one alternative**
4. **Honest broker:**

   shows all alternatives 'honestly'



Scientists, expert councils:
"The 5th Branch of Government"
Sheila Jasanoff (1990)

CAN TECHNOLOGY REPLACE SOCIAL ENGINEERING?

ALVIN M. WEINBERG

- Social problems are more complex than technological problems
- Social engineer approach vs. technologist approach
- The major technological fix of the past
  - poverty & war
- The technological fixes of the future
  - IUD & conservation of resources
- Will technology replace social engineering?

TECHNOLOGICAL FIX

Think of examples for issues regarding:

- **Poverty**
- **Climate change**
- **Inequality**
- **Health**
- **Mobility**

TECHNOCRACY

Government by experts:

- Candidates selected based on specific expertise rather than e.g. political orientation;
- Or government heavily relying on (outside) experts on specific matters.

Often in times of crisis

Often comes with a large bureaucracy:

- Skilled experts
- Based on rules

DISCUSSION

What makes an expert?

What should be the role of experts in policy making?

Who can check on the experts?