

## Lecture 6:

# The Role of Interests and the Question of Autonomy

Course: Science, Technology and Society Studies

# Edible Knowledge

Controversy around the chemical transfer of knowledge.

McConnell and Ungar believed that memory is stored in chemicals and can be transferred from animal to animal.

Controversy: WHAT is being transferred? Chemical matter OR Implants from parts of the body?

Importance: Mammal *versus* worms.

Issues:

- Once again, SKILL and patience of the individual researcher.
- Lack of credibility (and the role of the Worm Runners' Digest).

FINAL Result: Interest waned. Because better methods to ensure 'edible knowledge' in mammals came up (brain peptide research). Shift of focus from RNA -> Peptides.

# The Question of Autonomy

## PATTERNS of POLICING and PUNISHMENT in science

- WHO are the players?
  - Corporate bodies/industry/industry associations and lobbies
  - State machinery and policymakers
  - Professional bodies (e.g. Indian Medical Association, IEEE etc.)
- WHAT is involved?
  - Overt exercise of power over others to get one's way
  - Setting of agendas
  - Shaping of people's beliefs
- WHY is it so crucial?

Science enjoys LEGITIMACY because of its METHOD, because scientific knowledge is supposedly derived from 'nature', is OBJECTIVE.

UNDISPUTED scientific knowledge plays a powerful *legitimizing* role.

EXAMPLE: Benefits of vaccination

# Policing and punishing dissent...

- NUMBERS are not important. If a small number of renowned scientists DISSENT from the mainstream, it delegitimises the uncontested AUTHORITY of science.

Pose a THREAT to DOMINATION of SCIENCE.

- FORMS of dissent:
  - Research and publication
  - Teaching
  - Making public statements
- FORMS of suppression:
  - Censorship
  - Denial of access to research facilities
  - Withdrawal of funds
  - Complaints to superiors
  - Reprimands
  - Punitive transfer, demotion, dismissal, blacklisting, or threats.
- Best known EXAMPLE: McCarthyism in the late 1940s and early 1950s.

# Policing and punishing dissent...

- RARE to see repression OR open censorship. More likely to find self-censorship, fear.
- Psychological impact on scientists.

## HOW to identify 'suppression'?

- Demotions for 'BAD' performance: Do scientists with similar performance also get demoted?
- Publications/research grants/appointments: What is the method of responding to scientific criticism?
  - Write a paper, organise a seminar
  - Call and talk to boss/funding agency(See 'How Big Tobacco Corrupts Science', '750 pages of Tobacco Conspiracy')

The MS Swaminathan *versus* RH Richharia debate

# The case of Pesticides

World-wide debate since the 1960s

Argument 1: Pesticides are essential to kill 'undesirable' plants and insects

Argument 2: Many uses of pesticides are unnecessary or harmful.

**Dr Melvin Dwaine Reuber:** Critic of pesticides, his work linked pesticides with cancer. Headed the Experimental Pathology Laboratory at the Frederick Cancer Research Center

Industry complained to the Centre, Director of the Center questioned the quality of Reuber's studies of carcinogenicity of pesticides.

Court Case: Reuber vs Pesticide & Toxic Chemical News.

**Clyde Manwell:** Attacked in Parliament, attempts by his University to dismiss him.

**Robert L. Rudd:** Wrote *Pesticides and the Living Landscape*. Book was delayed and scrutinized by 18 reviewers before publication. Lost a promotion and almost dismissed from the University of California.

**Frank E. Egler:** Author (and journal) censured in professional bodies, even though the article would not have been seen by most of those present.

# The case of Pesticides

- Suppression serves industry interests.
- Synergy and symbiotic relationship between citizens and dissident scientists.
- *Modus operandi* of academic suppression: Talk to the boss.
- Corporate/industry culture and its impact: The Reuber case.
- Involvement of government: 'Captured bureaucracy', State involvement in creating markets for capital.

Centre for Science and Environment vs Coke/Pepsi

# The Fluoridation debate

Fluoridation: Addition of one part per million of fluoride to drinking water.

Endorsed by the United States Public Health Service and the American Dental Association (ADA)

Argument 1: This prevents tooth decay in children

Argument 2: Fluoride involves health hazards

**Dr George Waldbott:** Prominent allergist. Wrote about hazards of fluoride. Articles to *certain* journals were routinely rejected. Allegations of interference by the United States Public Health Service

ADA's dossier: Guilt by Association, equated Waldbott with the Ku Klux Klan and cranks.

**John Colquhoun:** Department of Health in Auckland, New Zealand. Formally warned to stick to 'official policy'.

**Mien Bulthuis:** Dissertation on fluoride's role in inhibiting 'good' enzymes. The Chief Inspector of Health in the Netherlands tried to prevent publication, citing danger of public concern about fluoride.



# The Fluoridation debate

- Key force: The dental profession. NOT the State or corporates.

EXAMPLE: European governments, Referendums in the US.

Industry interests: Aluminum industry, toothpaste manufacturers, sugary food manufacturers.

- ADA acted as a 'system of power'. Justification enhanced the 'scientific status' of dentists. STATUS interests more crucial than economic or political interests.
- Modus operandi: Threats to deregister dentists, warnings from superiors, blocking of academic articles.

ONE famous case where submissions were returned without being opened.

- Stigmatizing opponents as 'reactionary', 'irrational', 'confused', 'unscientific'.

# The case of Nuclear Power

Argument 1: Nuclear power is 'green', safe and economical.

Argument 2: Hazards (nuclear reactor accidents, long-lived radioactive waste), proliferation of nuclear weapons, high economic cost.

- 1965: US Atomic Energy Commission (AEC)'s study on health effects of radiation. AEC pressurised **Dr Thomas Mancuso** to deny radiation impacts, but he refused.
  - 6 reviewers: 4 favourable, 1 recommended termination of study. AEC terminated the study, citing only the two negative reviews, and transferred it to a private company.
- **Ross Hesketh**: Nuclear physicist at the Central Electricity Generating Board in Britain. Disciplined, harassed, transferred, and finally dismissed.
- **Atsushi Tsuchida**: Physicist working at the Institute of Physical and Chemical Research in Japan. Suppression of publications, denial of promotion, and prevented from delivering lectures.
- **Centre for Studies in Science Policy (CSSP)** in JNU: Department was shut down following reports critical of nuclear power.

# The case of Nuclear Power

- Modus operandi: Transfers, withdrawal of research funding and staff, blocking of publications, and dismissal.
- Key force: State and state-run research bodies.
  - Historical links with nuclear weapons production
  - Danger of the potential role of civilian nuclear power in proliferation of nuclear weapons
  - Potential danger of nuclear power, risky to get private players involved to prevent terrorist and criminal use of nuclear materials
  - Nuclear power has rarely been a commercial proposition. Government backing required for military, status, or social control purposes
- Need for secrecy, framework of 'national security'.

# Larger framework

WHAT is the linkage between systems of power and suppression of scientific research?

- Interests (of corporations, associations, State) on the issue in question
- Challenge to these interests
- Key role for dissident experts in supporting the challenge
- Direct or indirect use of power to attack some of the dissidents

PESTICIDES: Chemical companies and profit ----- challenge by health and environmental movement -----dissident scientists play critical role ---  
- to legitimise social movements ----- attacks on critical scientists from industry

PROBLEMS:

- Systems of power are not COMPARTMENTALISED: Both government and corporate bodies are crucial. State bodies are closely aligned to industry (e.g. dental association and public healthcare).
- Career interests of scientists play a role.
- Hierarchy *within* scientific institutions, power and suppression by bosses.