

Secrets.....

National Security and Environmental Quality

Yale University
January 19, 2010
Environmental Politics and Law
John Wargo

Green Intelligence

- Who Produces It?
- Where Does It Flow?
- Is It Intelligible?
- Is It Understood?
- Who Owns It?

Purposes of Secrecy?

What is the purpose of secrecy in society?

How Do Terror and Warfare Depend Upon Secrecy?

When Does Secrecy Threaten National Security?

How is Secrecy Related to Individual Rights?

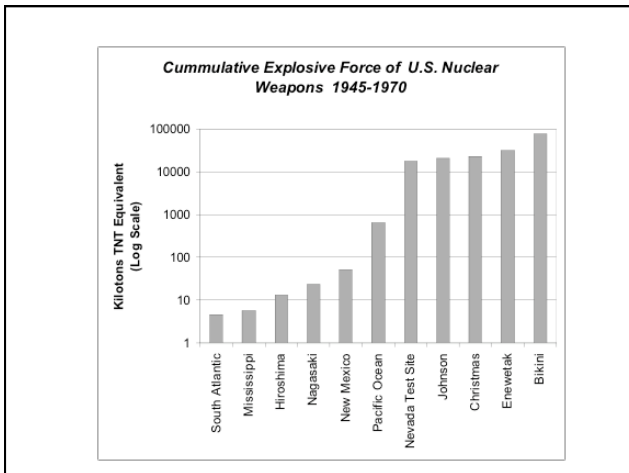
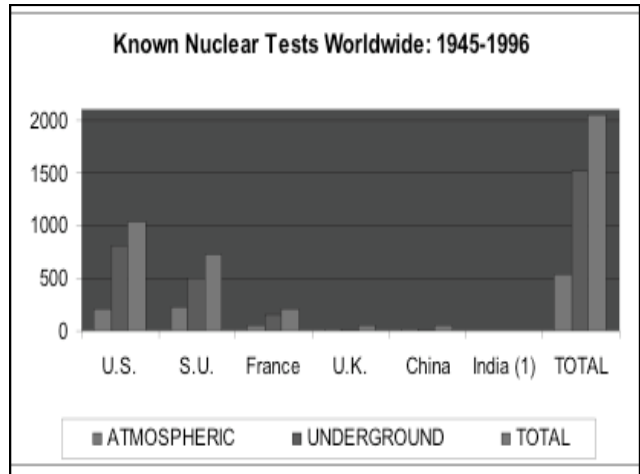
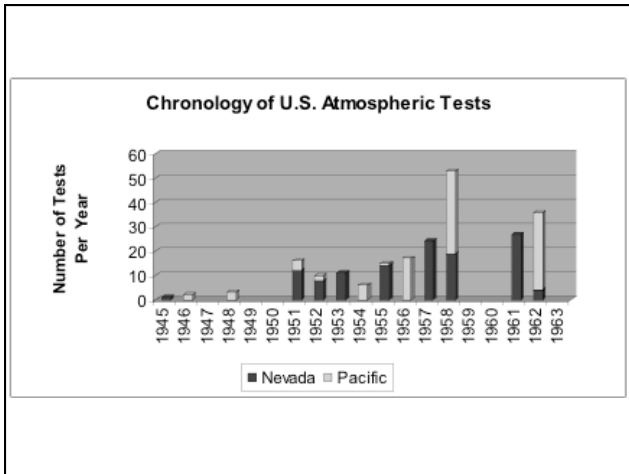
Common Scripts in Environmental History....

Who Knew About Contaminants?

When Did they Know?

When Did they Inform the Public?


What Did they Do About the Problem?



Klaus Fuchs

British theoretical scientist at Los Alamos during the Manhattan Project, had access to top secret material, much of which he passed to the Soviets in late 1940's.

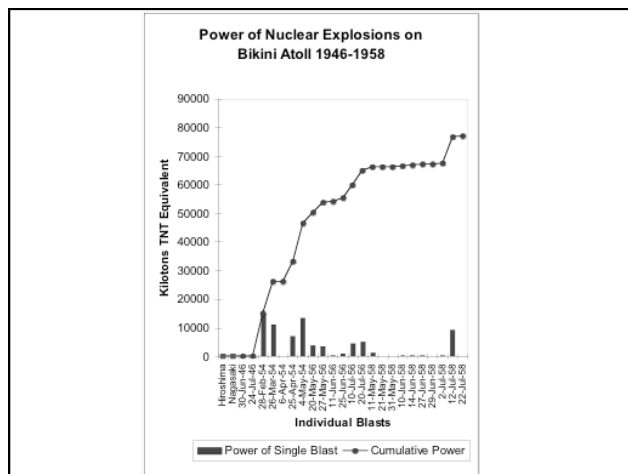
Fuchs was tried and convicted of espionage in Britain in the 1950s. Fuchs served 9 years of a 14 year sentence.



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The Lesson?

- Most Secrets have Limited Lives
- The more valuable they are, the more limited is their life.

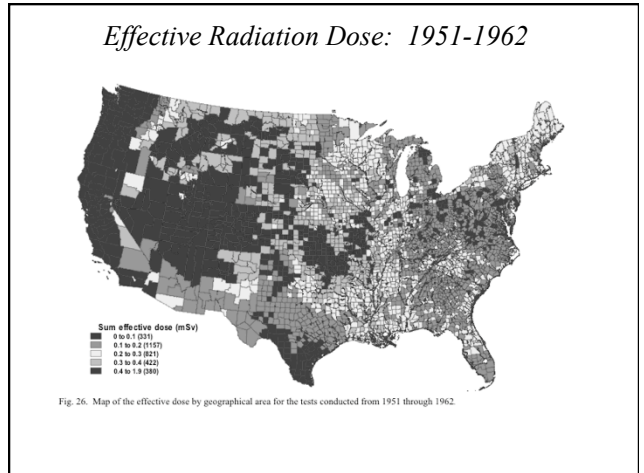
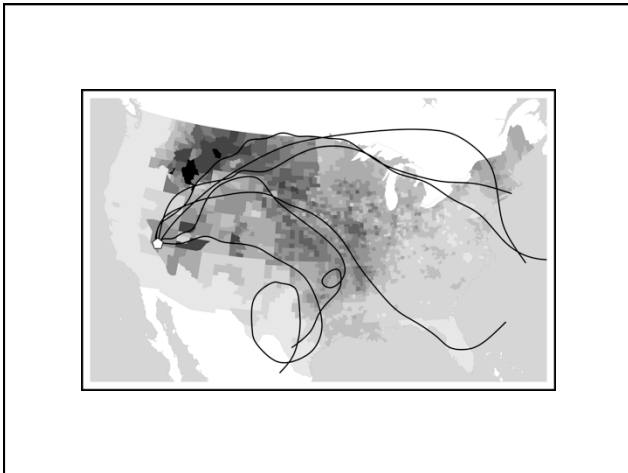
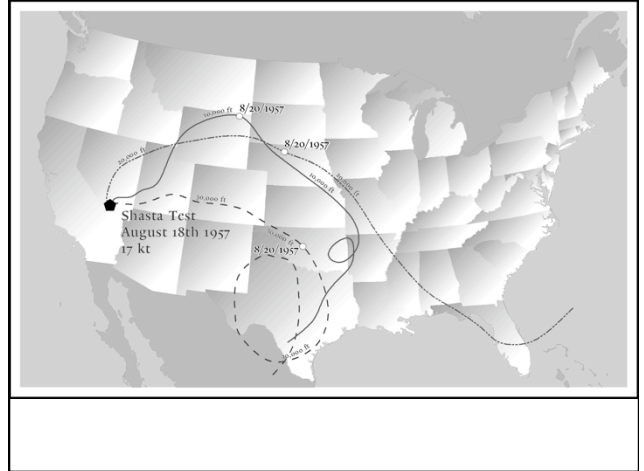
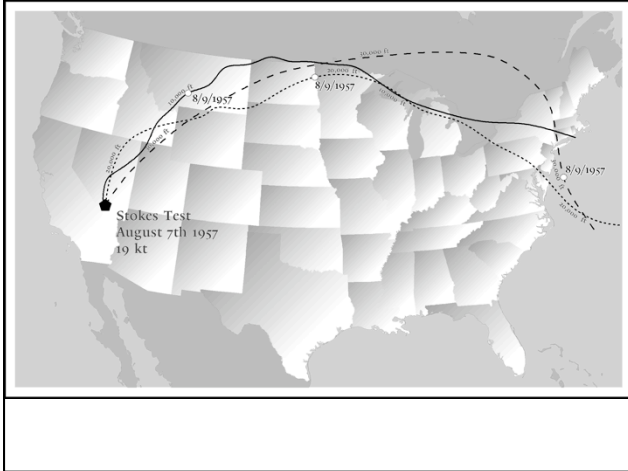


Project Gabriel – Sunshine 1949-1961

Sunshine scientists were quickly patching together evidence of the presence of strontium 90 in rain, soil, water, plants, and food, evidence that could threaten the AEC's efforts.



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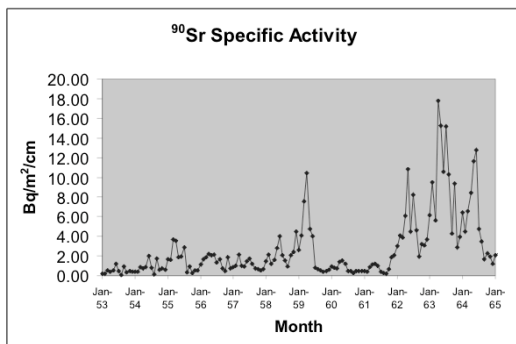


Figure 5: Specific activity of Sr-90 in precipitation (deposition density per cm of rain) for N.E. U.S. baseline sites for each month from 1953-1965.

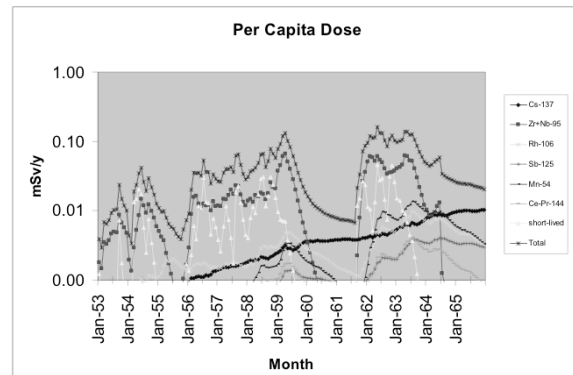


Figure 14: Monthly variations in Per Capita Dose from specific radionuclides. The short-lived radionuclides (I-131, Ba-La-140, Ru-103, and Ce-141) are grouped together.

Project Sunshine: Human Tissues?

Project Sunshine scientists eventually obtained nearly 15,000 bodies from New York, San Francisco, Houston, Chicago, Japan, India, South Africa, Brazil, Colombia, Peru, Chile and Bolivia and numerous European nations.

Why seek tissues from other nations?

- Permission to take the body parts was never sought nor obtained from next of kin
 - Bones were “cleaned”, packaged in formalin, shipped to New York or Chicago
- Then crushed and analyzed by the laboratory technicians.
- Sometimes the bones were “pooled samples” meaning that body parts from different individuals were combined.

1956

10 Years After
Testing Began

U. N. BEGINS STUDY OF FALL-OUT DATA

Soviet Expected to Augment
Reports From 22 Countries
—Data Secret Till Nov. 2

By KATHLEEN TELTSCH
Special to The New York Times

Strict secrecy rules have been adopted. The committee will meet privately. It has agreed to withhold the reports it gets from publication.

Sources close to the committee indicated tonight that the desire to avoid public discussion of an issue in the United States elections was the reason for the committee's decision to keep its proceedings secret.

Hazards of radioactive fall-out have become a major issue in the United States Presidential election campaign. Adlai E. Stevenson, the Democratic candidate, called for an agreement to halt further testing of hydrogen weapons. The proposal was assailed by President Eisenhower as wishful thinking.

Whole Wheat Bread Far Exceeds White In Strontium Tests

Whole wheat bread contains roughly three to four times as much radioactive strontium 90 as does white bread, tests by Atomic Energy Commission scientists here have shown.

New York Times Sept 4, 1959

Minnesota,
Vermont, and
other
environmental
“hot spots”

First Tests of Milk By Government: 12 Years After Explosions Began

U. S. TESTING MILK ON RADIOACTIVITY

New York One of Five Pilot
Areas—Physicist Denies
Danger in Fall-Out

WASHINGTON, May 10 (AP)—The Public Health Service is starting to test radioactivity in milk from milkshed areas supplying New York City, Cincinnati, Sacramento, Salt Lake City and St. Louis.

The five areas were selected primarily because of the cooperative attitude of state and local health agencies and the local milk industries, a spokesman said today.

“There is no implication that

milk in these five milksheds is more or less radioactive than in others,” he emphasized. “They are representative milksheds and they roughly span the nation from east to west.”

He added: “This is a pilot program, and no doubt it will be expanded as time passes.”

The spokesman said the continuous study of radioactivity in milk would supplement the recently announced program of the Food and Drug Administration for continuous monitoring of radioactivity in common food products.

He explained that various tests over the last couple of years had shown increasing trace amounts of strontium-90 and cesium-137 in milk.

Points are being established in the milkshed areas for shipment of gallon samples of fluid milk each month to the service's Robert A. Taft Sanitary Engineering Center in Cincinnati.

The spokesman said some samples already had arrived at the center for testing but information was not available here as to the areas from which the samples came.

May 10, 1957 New York Times

To Combat Strontium 90

Addition of Calcium Compounds to
Diet Is Advocated

The writer of the following letter won the Nobel Prize in Chemistry in 1954. He is head of the chemistry division and is director of the Gates and Crellin Laboratories of Chemistry at the California Institute of Technology.

TO THE EDITOR OF THE NEW YORK TIMES: Strontium 90 from nuclear bomb tests is now being deposited in the bones of every human being on earth. This radioactive element damages the bones and bone marrow in such a way as to cause bone cancer and leukemia, and perhaps also other diseases. It is not unlikely that some tens of thousands of Americans will die of bone cancer and leukemia caused by the bomb tests that have already been carried out. Dr. Charles L. Dunham, Director of the United States Atomic Energy Commission's Division of Biology and Medicine, has recently given as a possibility the range 10,500 to 21,000.

Linus Pauling

Nobel Prize Winner

Sept. 4, 1959 New York Times

Body Discriminates Against
Strontium, Favors Calcium
Uptake

Add Calcium to the Diet

- Milk
- Bread
- Animal Feeds
- Fertilizers

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Surgeon General Denies Fallout Hazards

Apr 25, 1959 New York Times

**FALL-OUT DANGER
TO MILK IS DENIED**

Surgeon General Finds No
Immediate Peril—Rise Is
Expected to Continue

WASHINGTON, April 24
(AP) — Public health officials
see no immediate danger in cur-
rent levels of radioactivity in
milk but predict rising contami-
nation until 1970 to 1975.

**LIBBY DECLARES
SOVIET DOUBLED
RADIATION IN AIR**

Asserts That Russian Tests
Last Fall May Bring Rapid
Fall-Out During 1959

By JOHN W. FINNEY
Special to the New York Times.

WASHINGTON, March 13—
The Soviet Union, in one month
of intensive atomic testing last
fall, virtually doubled the
amount of radioactive debris in
the earth's atmosphere, Dr. Wil-
lard F. Libby reported today.

Willard Libby AEC
Commissioner:

Atmospheric Load Doubled by
Soviet Tests in Arctic in 1
Month...

Prompted Debate Over
Atmospheric Residency Time...

The longer, the better

as it allows decay of

radioactive compounds.

Resolution: 10% decline / year

Adlai Stevenson, Democratic
candidate for President, warned of
three dangers in 1956:

- 1) genetic hazards to future generations;
- 2) risk of bone cancer and other illness to the
current population; and
- 3) inability to conduct medical investigations
due to background contamination levels in
human tissues. (No controls...)

13 Yale scientists signed a statement endorsing
the views of Stevenson.

The White House “denied that the nation’s milk supply had been
contaminated by radioactive strontium 90 in the fall-out from
hydrogen bomb explosions.”

13 at Yale favor H-bomb test ban. New York Times. Nov. 4, 1956.

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STRAUSS DENIES CHARGE ON MILK

Disputes Stevenson Stand That H-Bomb Fall-Out Has Contaminated Supply

Special to The New York Times.

WASHINGTON, Nov. 3—The White House denied today that the nation's milk supply had been contaminated by radioactive strontium 90 in the fall-out from hydrogen bomb explosions.

"The study was made by Dr. W. F. Libby, then a professor at the University of Chicago, now a member of the Atomic Energy Commission. Designed to provide advance protection for the people of our nation, especially our children, the purpose of the study was to determine the feasibility of purifying milk if it were ever contaminated by fall-out should we be attacked by an enemy using atomic weapons. The results of the study, though incomplete, were encouraging.

Where is the threat?

Soviets or the President & AEC?

AEC Withheld Milk Data Until After Election

After the election, within two weeks of Strauss' rebuttal, the AEC reported a "steep rise" in the radioactive content of metropolitan New York's milk supply (that occurred in September of 1956, two months before the election).

Strontium 90 in North Dakota Powdered Buttermilk 1955-1959

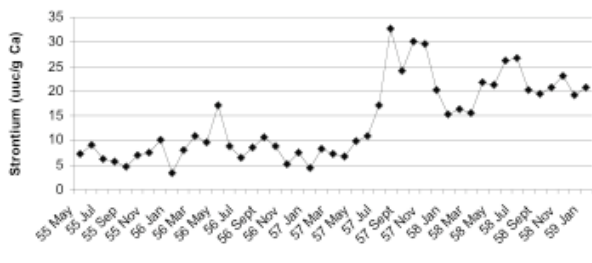
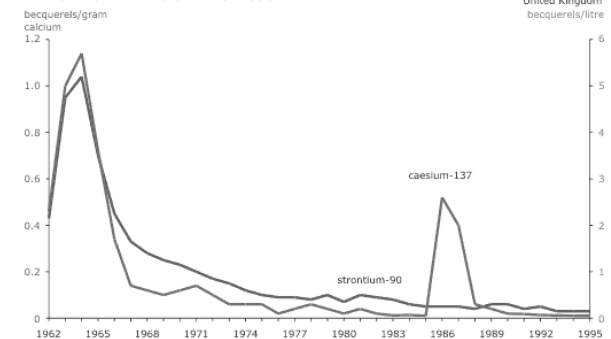


Figure 17: Annual average concentration of strontium-90 and caesium-137 in milk from world-wide fallout: 1962-1995



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Key Elements of AEC's Narrative:

Human Induced vs. Natural Radiation:

The AEC disclosure was very carefully worded embedded in a discussion of the triviality of all fallout, when compared with the effects of natural radiation.

Relative Risk:

Fallout was continually compared with the devastating potential of nuclear warfare.

[1] Eisenbud M. Symposium of Washington Academy of Sciences. Washington, DC. Cited in New

CONSUMERS' UNION 1959

Consumers' Union in 1959 collected milk from 48 cities in the U.S. and two in Canada and found levels of strontium-90 were higher than those reported earlier, but more importantly, they found considerable geographic variability.

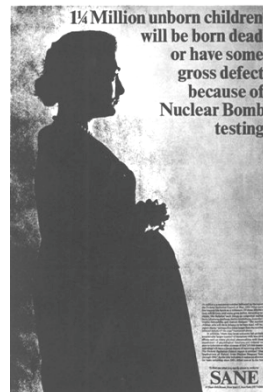
When compared to the cost of the weapons development program, the cost of food testing was virtually zero, and could not possibly have justified the low budget and poor quality milk sampling program that prevailed through the nuclear weapons testing program.

Precise ability to predict fallout could only empower local groups to become more politically vocal in opposition to testing.

Human Milk

The AEC's New York office first tested human milk in 1953 for the presence of strontium-90, information buried in a poorly labeled table published within a Joint Congressional hearing report in 1957.

The finding went unreported in the scientific literature and by the national media. However it provided the first credible evidence that mothers transferred radionuclides to nursing children.



Nuclear testing became one of the 1st instances when environmental threats to children's health became a logic for changing national security policy.

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A. E. C. IS ACCUSED ON FALL-OUT DATA

Private Group Sees Lack of Candor and Objectivity in Statements on Hazards

"It was not until January, 1956, that the A. E. C. admitted that Sr. 90 is absorbed through milk, accumulates in human bones, and that the highest concentration occurs in children.

"However, unclassified data published by A. E. C. Commissioner Libby show that the Sr 90 of soil, foods (including milk) and bones were measured as early as 1952.

AEC Deception?

March 15, 1958

New York Times

AEC knew Sr90 accumulated in soils, foods, and children's bones in 1952.

60 YEARS OF EXPERIMENTATION... 43 YEARS OF NEGOTIATION...

[1959 Antarctic Treaty](#)

[1963 Hot Line Agreement](#)

[1963 Limited Test Ban Treaty](#)

[1967 Outer Space Treaty](#)

[1967 Latin America Nuclear Free Zone Treaty](#)

[1968 Nuclear Non-Proliferation Treaty](#)

[1971 Seabed Treaty](#)

[1972 Strategic Arms Limitation Treaty I / ABM Treaty](#)

[1972 Strategic Arms Limitation Treaty I Interim Agreement](#)

[1974 Threshold Test Ban Treaty](#)

[1976 Peaceful Nuclear Explosions Treaty](#)

[1977 Environmental Modification Convention](#)

[1979 Strategic Arms Limitation Treaty II Treaty](#)

[1985 South Pacific Nuclear Free Zone Treaty](#)

[1987 Intermediate-Range Nuclear Forces Treaty - INF](#)

[1988 Ballistic Missile Launch Notification Agreement](#)

[1991 Strategic Arms Reduction Treaty](#)

[1993 Strategic Arms Reduction Treaty II](#)

[1996 Treaty of Pelindaba](#)

[1996 Comprehensive Test Ban Treaty](#)

Safe Drinking Water MCL: Set in 1976 21 Years Following 1st Atmospheric Test

- EPA did not exist until 1970
- Safe Drinking Water Act Passed in 1976
- EPA finally set a limit for acceptable radioactivity levels in drinking water, 1 millisievert, or 0.1 rem/ year.

Radionuclides in Food?

Still no maximum permissible levels of radionuclides in milk or any other foods.

Secrecy, Surveillance and Public Opinion

When secrecy was combined with the absence of environmental and health surveillance, public opinion and politics favored development of hazardous technologies.

Elites controlled knowledge, and then released it selectively to an unknowing public.

Environmental and Health Lessons from Nuclear Weapons Testing

- Persistence: Half life & Residency in Env. Media
- Movement: Atmosphere, Oceans, Water, Soils, Plants....
- Fate: Human Tissues
- Effects: Thyroid, Cancer, Heritable Mutations
- Dose Response
- Experimentation: Overt or Covert?
- Right to Know vs. Need to Know
- Prior Informed Consent: Not Sought
- Surveillance: Deliberate Avoidance; Narrow Design
- Natural or Background Comparison of Risk

Lessons About Secrecy

- Secrecy is a Form of Control or Regulation
- Concentrates Knowledge Among Those with Authority or Power
- Secrets Turn Information into a Commodity of Great Value: Property
- Secrecy & Failed Surveillance Inhibit Public Intelligence
- Secrecy Prevents Accountability
- Undermines Democracy: Restricts Participation

When is secrecy justified?