

McCarthy and the Red-ucators: Effects of Political Persecution on Science

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The Victims of Political Repression

Political persecution and its impact on targeted individuals, direct and indirect (via their community)

Setting: McCarthy period (second red scare) and academia.

Many historical episodes of political persecution and censoring (Goldstein 1978)



- ▶ Haymarket Affair: violent confrontations between police and labor protesters in Chicago, 1886
- ▶ "Little red scares" of 1908, 1935, and 1938-41
- ▶ "Great red scare" in 1919
- ▶ Repression of opposition to WWI, WWII and Vietnam war
- ▶ Post-World War II abuses of intelligence agencies (Goldstein 1978).

McCarthyism, second “red scare” 1949-1954

Longest era of political repression in the United States

Targets communist (“red”) beliefs

Broad-based popular support: Just 113 of 4,933 surveyed opposed restricting activities and rights of admitted Communists (Stouffer 1955)

13 of 65 million US residents subject to loyalty reviews, employment tests, investigations, and hearings (Brown 1958)

A “nadir in the history of academic freedom”

David Gardner, the University of California's 15th President was a young professor at Berkeley during McCarthyism. He calls this period

“a nadir in the history of American academic freedom. [It] reflected the pathology of the country's seemingly inescapable preoccupation with communism and security [and] contributed...to the neurosis that...encouraged those forces raged against freedom of inquire and dissent” (Gardner 1967, pp. vii-viii)

In June 1954, McCarthy was censured and in December condemned by the Senate

Preview of Findings: Persecution Permanently Reduced Scientific Output of Accused and Temporarily Lowered Citations to their Existing Work

- ▶ Accused scholars were 10% less likely to publish and published 25% fewer papers after accusations
 - ▶ Differential effects on scholars with more alleged affiliations
 - ▶ Differential effects on male scholars
- ▶ Pre-1949 publications of accused scholars were less likely to get cited and received fewer cites during McCarthyism
 - ▶ But citations recovered after 1954 as McCarthyism weakened
- ▶ Ongoing:
 - ▶ Effects on academic promotions, PhD students
 - ▶ Case study of non-signers of California loyalty oath

Literature

- ▶ McCarthyism in history and political science: Brown (1958), Goldstein (1978), Gibson (2008), Fried (1991), and McCarthyism in the Education Sector: Schrecker (1986), Badash (2000).
- ▶ Civil liberties and political persecution: McCarthyism, Stouffer (1955), COVID crisis, Alsan et al. (2021), Jewish Polgroms, Anderson et al. (2017), Jebwab et al. (2019), Graham and Svolik (2020).

Outline

1. Introduction
2. Historical Background
 - ▶ McCarthyism
 - ▶ The Red-ucators Pamphlets
3. Data
 - ▶ Entries in the Red-ucators
 - ▶ The American Men of Science (MoS)
 - ▶ Scientific Output: Publications and Citations
4. Results
 - ▶ Publications
 - ▶ Citations

An Intensifying Threat of Communism



- ▶ Churchill in 1946: "an iron curtain has descended across" Europe
- ▶ August 29, 1949: Soviet Union's first atomic bomb test
- ▶ October 1st, 1949: Mao Zedong takes Beijing
- ▶ June 25, 1950: 75,000 soldiers of North Korea's People's Army cross into the pro-Western Republic of Korea
- ▶ January 21, 1950: Alger Hiss sentenced to five years in prison, confirming infiltration of U.S. government by Soviets

In a 1950 Speech, McCarthy Mentions “list” of Communists in State Department



February 9, 1950, U.S Senator Joseph McCarthy speaks at the Republican Women's Club of Wheeling, West Virginia:

"I have here in my hand a list of 205 — a list of names that were made known to the Secretary of State as being members of the Communist Party and who nevertheless are still working and shaping policy in the State Department."

McCarthyism: Claims of Subversion with Weak Factual Base



- ▶ Herbert Block (Herblock) in Washington Post, March 29, 1950
- ▶ President Truman on February 16: "not a word of truth"
- ▶ McCarthy's "list" was never released, and is likely to have never existed
- ▶ "Privately, I refer to McCarthy as a pathological liar" (Truman to Dean Acheson, 1950)

McCarthyism

McCarthyism: the practice of making **accusations** of subversion or treason **without proper regard for evidence**.

McCarthyism Primary Targets

- ▶ Government employees
- ▶ Entertainment industry: Hollywood's blacklist
- ▶ Journalists
- ▶ Labor-union activists
- ▶ Educators: **teachers, professors, and scientists**

Educators

Targeted for their influence on the younger generation

Children's "patriotism" was undermined by "subversive teachers in a subversive system." Michaels (2017)

Investigated by official government agencies and private groups

- ▶ Congressional and state committees, Federal Bureau of Investigation (FBI), police Red Squads
- ▶ American Legion, Minute Women, and **National Council for American Education (NCAE)**.

In 1948 Allen Zoll founds NCAE



1949-53: NCAE publications target schools infiltrated by "subversive" teachers and communist sympathizers.

- ▶ How Red Are The Schools?
- ▶ Progressive Education Increases Delinquency
- ▶ The Yale Whitewash
- ▶ They Want Your Child
- ▶ Red-ucators

Five Publications, 1949 to 1951

- ▶ 1949: Harvard, Yale, University of Chicago
- ▶ 1950: University of California, Stanford University, and California Institute of Technology, and Columbia University
- ▶ 1951: Women's colleges – Connecticut, Bennington, Bryn Mawr, Skidmore, Mount Holyoke, Sarah Lawrence, Vassar, Smith, and Wellesley

Example: Robert S. Mulliken, Physics, a Red-ucator at University of Chicago

MORRISON, Charles C. - Lecturer on Problems of Contemporary Life
American Friends of Spanish Democracy, Member of Committee - Undated Letterhead
American Fund for Public Service (Garland Fund), Member, Board of Directors - Annual Reports
August Peace Parade and Jane Addams Memorial, Endorser - Letterhead, August 1937
Russian Reconstruction Farms, Inc., Member of Advisory Board - Letterhead, March 20, 1926

MULLIKEN, Robert S. - Professor of Physics
Council for Pan American Democracy, Signer, June 8, 1945
Dinner to Edward U. Condon, Sponsor - Letterhead, April 6, 1948

OGBURN, William F. - Professor of Sociology
American Association of Scientific Workers, Chairman, Chicago Branch - Booklet, 1940-41
Chicago Council of the Arts, Sciences and Professions, Sponsor - Chicago Sun-Times, January 28, 1949, p. 2
Chicago Council of the Arts, Sciences and Professions, Sponsor - Worker (Illinois Edition), April 3, 1949, p. 2A
National Wartime Conference of the Professions, Sponsor - Program, May 8-9, 1945

PAGE, Thornton L. - Assistant Professor of Astronomy
National Council of the Arts, Sciences and Professions, Sponsor - Program, March 25-27, 1949

PALMER, Albert W. - Professor of Practical Theology, Emeritus
American Peace Mobilization, Signer of letter to President Roosevelt - Daily Worker, January 10, 1941, p. 1
Chicago Conference on Race Relations, Sponsor - Program, July 22, 1939
Council for Pan American Democracy, Signer of Manifesto, June 8, 1945
National Federation for Constitutional Liberties, Signer of Petition to Discontinue the Dies Committee, January 1945
Statement Defending the Communist Party, Signer - Daily Worker, March 5, 1941

PAUCK, Wilhelm - Professor of Historical Theology
Protestant, Editorial Adviser, June-July 1942

Institution: University of Chicago

→ Last, first, and middle name

→ Title

→ Subversive associations and dates (when available)

405 Scholars from 16 Institutions

Institution	Nb. Red-ucators	Freq	Cum. Freq
Columbia University	87	0.21	0.21
Harvard University	68	0.17	0.38
University of Chicago	60	0.15	0.53
University of California	33	0.08	0.61
Yale University	30	0.07	0.69
Smith College	23	0.06	0.74
Stanford	22	0.05	0.80
Vassar College	15	0.04	0.83
Mount Holyoke College	13	0.03	0.87
Connecticut College	11	0.03	0.89
Sarah Lawrence College	10	0.02	0.92
Wellesley College	10	0.02	0.94
Bennington College	7	0.02	0.96
Skidmore College	6	0.01	0.98
Bryn Mawr College	5	0.01	0.99
California Institute of Technology	5	0.01	1
Total	405	-	-

Blacklist Socialists and Un-American Teachers

"as part of its campaign to rid the schools and colleges of socialistic, un-American teachings and teachers." (Red-ucators at the University of Chicago, 1949)

Publicly name professors who are alleged members of "un-American" organization

*"It doubtless will be contended that professors have a right to join any organization they wish. That is most certainly their right. **But the alumni, contributors, parents of students, and the students themselves, have a right to know to what un-American organizations their professors belong.** Also, if graduates and donors feel that because of such participation the professor of the school is not a fit one to support, or parents feel that the University is not a proper one to have their child attend, it is their right to step to remedy the situation." (Red-ucators at the University of Chicago, 1949)*

“Zoll took his toll”

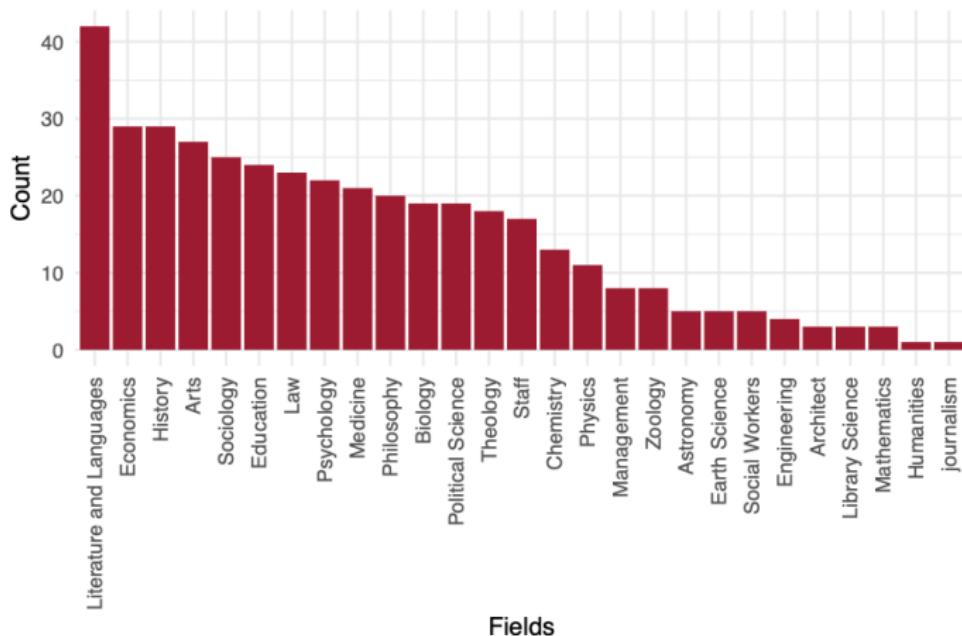
“He [Zoll], his followers, and his literature can be found near the center of many postwar campaigns against the schools. His dossier on the University of Chicago was almost the sole basis for the Broyles Commission’s attack in 1949... He was successful in getting the American Medical Association to demand an investigation of the schools for teaching socialized medicine. He addressed audiences from Harvard to Pasadena.... the fact is Zoll took his toll.” Iversen (1959)

1949: Broyles Commission – hearings targeting educators at University of Chicago and other universities

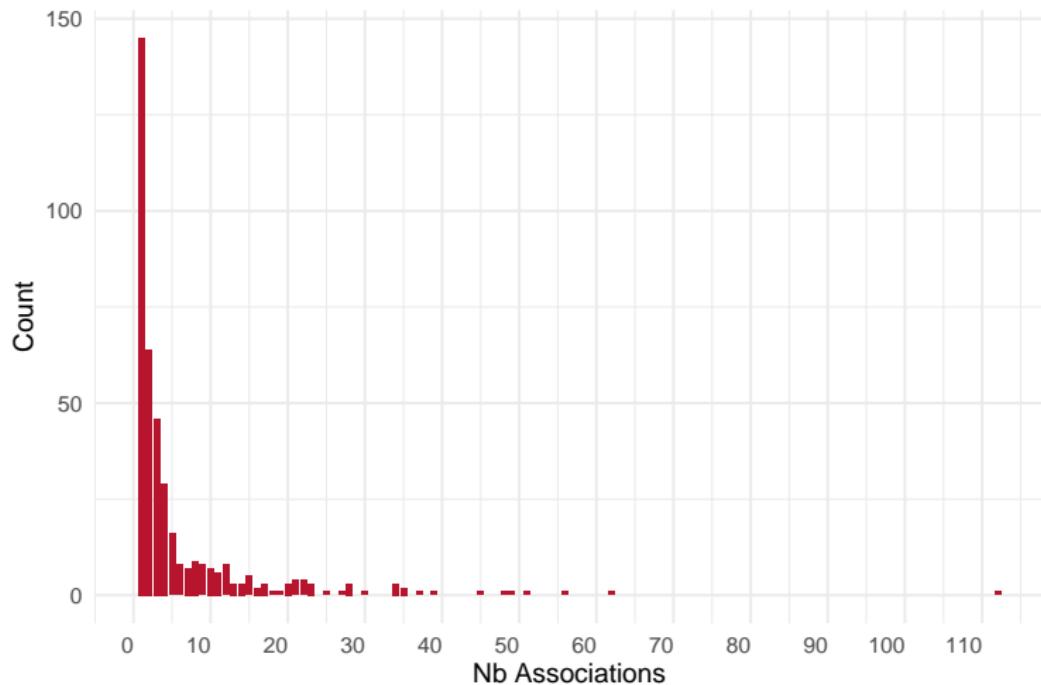
More than 50% of Red-ucators are Full Professors

	Obs.	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Professor	405	0.560	0.497	0	0	1	1
Associate Professor	405	0.109	0.312	0	0	0	1
Professor Emeritus	405	0.059	0.236	0	0	0	1
Assistant Professor	405	0.042	0.201	0	0	0	1
Lecturer	405	0.059	0.236	0	0	0	1
Female	405	0.168	0.374	0	0	0	1
Birth year	405	1,893.301	12.327	1,856	1,885	1,902	1,922
Nb. Associations	405	6.158	10.412	1	1	6	112

Most Accusations in Literature, Economics, and History



Average Red-ucator Linked with 6 “Subversive” Associations (st.dev.10.4)



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Three Sources on Reducators and Other Scholars

1. Red-ucator Pamphlets: list of accused scholars
2. Microsoft Academic Graph (MAG): publications and citations
3. American Men of Science (MoS, 1921 and 1956): biographies, publications, citations, and patents

Microsoft Academic Graph (MAG)

Scientific publications and citations, authors, institutions, and journals

Alternative to Google Scholar (most complete), Web of Science Core Collection (WoS), and Scopus

1. Open source and bulk access via Applications Programming Interface (API), while WoS & Scopus require heavy fees and Google Scholar is restricted
2. High quality metadata, incl. institutions: unlike Google Scholar, see Delgado López-Cózar et al. (2019), Martin-Martin et al (2018)
3. High quality coverage: Visser et al. (2020) and Martin-Martin et al. (2021): MAG is second most complete after Google Scholar

A Sample Entry in the MAG

Gertrude B. Elion had 105 publications, including
75 journal publications

Years for all publications

Result accuracy:

VIEW □ □ □ □ □ SORT BY SALIENCY □

On the Mechanism of Inactivation of Xanthine Oxidase by Allopurinol and Other Pyrazolo[3,4-d]pyrimidines

1970 JOURNAL OF BIOLOGICAL CHEMISTRY

Vincent Massey, Hirochika Komai, Graham Palmer, Gertrude B. Elion

Xanthine oxidase | Stereochemistry | Pyrimidine | View More (4+) ▾

Abstract Allopurinol and other 6-unsubstituted pyrazolo[3,4-d]pyrimidines have been shown to reduce all of the oxidation-reduction reactive groups of milk xanthine oxidase. The inhibitory action of these compounds has been shown to be due to a sort of "suicide" reaction, in which the product ... View Full Abstract ▾

gertrude b elion 1939 1970

Metabolic studies of allopurinol, an inhibitor of xanthine oxidase

1966 BIOCHEMICAL PHARMACOLOGY

Gertrude B. Elion, Aylene Kovensky, George H. Hitchings

The Wellcome Research Laboratories, Broughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, N.Y., USA

Xanthine oxidase | Xanthine analog | Uric acid | View More (7+) ▾

Abstract The metabolic disposition of allopurinol (4-hydroxypyrazolo[3,4-d]pyrimidine) was determined in mice, dogs, and human subjects. The drug is a substrate for, as well as an inhibitor of, xanthine oxidase and is converted in all species to the corresponding xanthine analog, alloxanthine, wh... View Full Abstract ▾

gertrude b elion 1939 1970

Potentiation by inhibition of drug degradation : 6-substituted purines and xanthine oxidase

1963 BIOCHEMICAL PHARMACOLOGY

Gertrude B. Elion, Sandra Callahan, Henry Nathan, Samuel Bieber, R.Wayne Rundles see all 6 authors

Duke University

Xanthine oxidase inhibitor | Xanthine oxidase | Xanthine dehydrogenase | View More (5+) ▾

Abstract The administration of the xanthine oxidase inhibitor, 4-hydroxypyrazolo[3,4-d]pyrimidine, concurrently with 6-mercaptopurine, results in a marked decrease in the metabolic oxidation of the latter to 6-thiouric acid in both the mouse and man. The inhibition of metabolic degradation by th... View Full Abstract ▾

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FILTER BY: □ CLEAR ALL

Time: 1939-1970

Top Topics: Chemistry, Xanthine oxidase, Biochemistry, Allopurinol, Oxipurinol, Purine metabolism, Stereochemistry, Primitide, Pharmacology, Biology

Publication Types: Journal publications, Patents, Other, Book chapters

Top Authors: Gertrude B. Elion, George H. Hitchings, Thomas A. Kreinsky, Samuel Bieber, R. Wayne Rundles, Henry C. Nathan

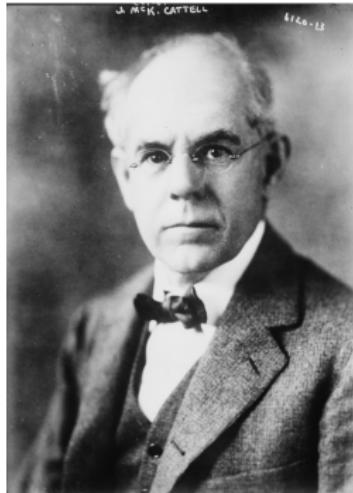
Authors with similar name: Gertrude B. Elion, Top co-author: P de Miranda, Publications (39) Citations* (733)

Gertrude B. Elion, Publications (1) Citations* (230)

Gertrude B. Elion, Publications (1) Citations* (121)

MORE

American Men of Science (MoS 1921 and 1956)



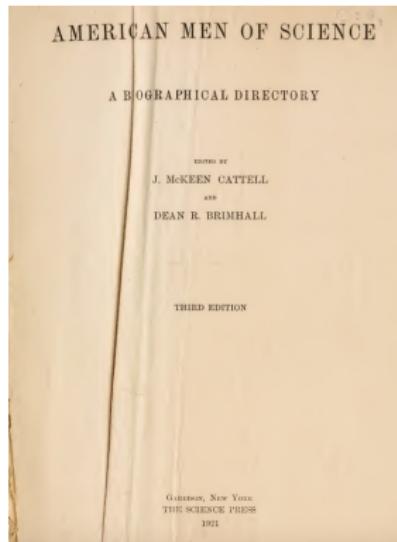
By Bain News Service - This image is available from the United States Library of Congress's Prints and Photographs division under the digital ID ggbain.36662.T

Originally collected by James McKeen Cattell (1860-1944)

- ▶ First US professor of psychology at Penn in 1888
- ▶ BA MA Lafayette College, PhD Leipzig
- ▶ Editor of Science for nearly 50 years

"American Men of Science. A Biographical Directory"

1921 and 1956



- ▶ "...initially intended as a reference list for the Carnegie Institution of Washington.... But the chief service it should render is to make men of science acquainted with one another and with one another's work." (Cattell 1921)
- ▶ All members of scientific societies
- ▶ Includes male and female scientists in Canada and the US
- ▶ Hand-collected biographies of all scientists in MoS in 1921 and 1956, 1906 is ongoing

Example: Dr. Truman Abbe

AMERICAN MEN OF SCIENCE	
Abbe, Prof. Hamm (Caroline), State College of Washington, Pullman, Wash., Eng. Educ., polit. Sci., Duk, July 12, 85; A.B., South Dakota, '91; Ph.D., Chicago, '14; Instt. for, Wash. State, 14-19; adm. prof, '25; A.A.; Edt. Soc. Phil. meetings.	Abbe, Cleveland, Jr., Engineering and Mining Journal, Tenth Ave. and 36th St., New York, N. Y.; Geology, Climatology, Washington, D. C., March 25, '72; A.B., Harvard, '94, A.M., '95; Ph.D., Columbia, '00; Prof. physiol., '00-01; Prof. nat. sciences, Weather Nor. and Indust. Col., '99-01; adm. U. S. Geol. Surv., '03-04; with U. S. Weather Serv., '04-05; with U. S. Geol. Surv., '05-06; with U. S. Geol. Surv., '06-07; Mem. Met. Geol. Soc., '07-01; asst. "Monthly Weather Rev.", '08-09; '14-16, ed. 15-17; "Sci. Am. Supplement," '19. A.A.; Geol. Soc. Wash., Pres., '06-07; Secy., '07-08; Secy. kindred; Topographic development; climate of Gumi, Alaska; full line of east North America; Washington winters.
Abbe, Dr. Robert, 11 W. 50th St., New York, N. Y.; Prof. physiol., M.D., Columbia, '91; Col. City of N. Y., '91; M.D., Columbia, '94; Prof. surg., Women's Med. Col. N. Y., '86-88; Post-Grad. Med. Sch., N. Y., '88-91; clin. instr., Inst. Civ. Engrs., '88-91; instr., Inst. of at-tension, virginia, St. Luke's Hosp., '84- A.A.; Surg., '92.	Abbe, McLean Hosp., '94-08; asst. supt., Boston City Hosp., '09-10; Prof. physiol., Boston City Hosp., '04-09; clia, pathologist, '09-17; med. director, mental hygiene com., Public Charities Assn., Pa., '20-21; Prof. physiol., '17; chief, neuro-psychiatrist, Illinois Inst., '17-18; A.A.; Amer. Med. Assn., Psychol. Ass.; Medico-Psychol. Ass.; New Eng. Soc. Psychiat. Insanity; medical psychology.
Abbe, Gen. Henry Luttrell, U. S. A. (retired), 23 Berkeley St., Cambridge, Mass.; Engineer, U. S. Corp. Eng., '64; Prof. Mch., U. S. Govt., U. S. Mill. Acad., '84; LL.D., Harvard, '88. All grades from second hnt. to col. E.C., 34-35 (referred to as "the best in the world"); Prof. in Div. of eng. and mktg. gen. U. S. Yaho; chairman, group XVI, Centennial Expos., '76; highest jury of awards, Atlanta Expos., '85; pres. board of commissioners, Panama Canal Co., '87-88; Pres. Am. Casal, '92-93; mem. Int. Commission Engineers, New Panama Canal Co., '97-00; consulting engineer, '00-01; prof. hydron. eng., George Washington Univ., '01-02; pres. Am. Soc. Hydron. Eng., '02; Pres. Am. Acad., '03; Pres. New Orleans Acad.; mem. Austro Imperial Royal Geol. Soc.; mem. Amer. Acad. of Arts and Sciences; cong. defense; submarine mining; explosives; electricity; vertical fire; astronomy; canals; river hydrology; climatology of the isthmus of Panama; the Chinese River; Panama Canal.	Abbe, Dr. Alexander (Clever), 4223 Baltimore Ave., Philadelphia, Pa.; "Hygiene, Bacteriology, Baltimore, Md., Feb., '68, Baltimore City, '71; Prof. physiol., M.D., Columbia, '81; Prof. physiol., phys. and surg., Georgetown, '02-05; physiol., George Washington, '06-10, surg., '10- Am. Med. Ass.; Radiotherapy; surgery.
Abbe, Dr. Truman, Stoneleigh Court, Washington, D. C. Medicine, Washington, Nov. 1, '73; A.M., Columbia, '81; Prof. physiol., M.D., Columbia, '84; Inst. physiol. physical, and surg., Georgetown, '02-05; physiol., George Washington, '06-10, surg., '10- Am. Med. Ass.; Radiotherapy; surgery.	Abbe, Dr. (Alexander) Clever, 4223 Baltimore Ave., Philadelphia, Pa.; "Hygiene, Bacteriology, Baltimore, Md., Feb., '68, Baltimore City, '71; Prof. physiol., M.D., Columbia, '81; Prof. physiol., phys. and surg., Georgetown, '02-05; Prof. physiol., phys. and director, Inst. of hygiene, Berlin, Hopkins, '88-91; asst. in charge, Inst. of hygiene, Prussia, '91; asst. in charge, Inst. of hygiene, Prussia, '91; Prof. physiol., phys. and director, Inst. of hygiene and publ. health, '92- Director, div. path. bacter. and disinfection, Bur. of Health, Phila., '92-93; Prof. physiol., phys. and director, Board of Health, '93-99; A.A.; Soc. Bact.; Am. Physicians; Physiol. Soc.; Soc. Exp. Biol.; Am. Ass. for Publ. Health Ass.; Philo. Soc.; Bacteriology and preventive medicine; infection, intoxication and immunity.
Abbot, Dr. (Charles) H. (arlan), Massachusetts	Abbot, Dr. (Charles) H. (arlan), Massachusetts

- ▶ Current work address:
Stoneleigh Court, Washington DC
- ▶ Birth place and date:
Washington, November 1, 1873
- ▶ Education: A.B. Harvard, 1895, M.D. Columbia, 1899, Berlin
- ▶ Employment: Instruct. Physics, physiol. and surg, Georgetown, 0—05; physiol. George Washington, 06-10, surg. 10-
- ▶ Member of Am. Med. Ass
- ▶ Research topics: Radiotherapy; surgery

Who is Included in MOS? Best Coverage for Scientists Doing Original Research

- ▶ Members of scientific organizations, plus other prominent scholars
- ▶ "tolerably complete for those in North America who have carried on research work in the natural and exact sciences." (Cattell and Brimhall 1921, p.v)
- ▶ "Some are admitted who are supposed to have advanced science by teaching, by administrative work, or by the preparation of text-books and compilations."
- ▶ "There are also some whose work has been chiefly in engineering, medicine or other applied sciences, and a few whose work is in education, economics or other subjects not commonly included under the exact and natural sciences. But the book does not profess to cover these fields." (Cattell and Brimhall 1921, p.v)

Investigating Selection into MoS

To examine selection, we hand-match scientists in MoS (1956) with faculty directories

- ▶ Harvard
- ▶ Columbia
- ▶ Stanford, Berkeley, and other California schools

Full professors are more likely to be included in MoS

	Not MOS	MOS	Difference	(p-value)
Education				
Nb. Of Degrees	1.68	1.96	-0.27	0.00
Master of Arts	0.25	0.18	0.06	0.00
Master of Science	0.13	0.16	-0.03	0.04
Master of Bus. Adm.	0.04	0.03	0.01	0.42
Doctor of Medicine	0.40	0.39	0.01	0.60
Doctor of Philosophy	0.20	0.53	-0.33	0.00
Bachelor of Science	0.17	0.19	-0.02	0.15
Law Degree	0.07	0.06	0.01	0.21
Honorary	0.04	0.13	-0.09	0.00
Field				
Mathematics	0.01	0.01	-0.00	0.54
Physics	0.02	0.04	-0.02	0.00
Astronomy	0.00	0.01	-0.01	0.04
Chemistry	0.04	0.07	-0.03	0.00
Biology	0.03	0.08	-0.04	0.00
Psychology/psychiatry	0.06	0.07	-0.01	0.48
Medicine	0.10	0.11	-0.02	0.17
Economics	0.02	0.04	-0.03	0.00
Business	0.04	0.04	0.00	0.67
Position				
Professor	0.09	0.32	-0.22	0.00
Associate Professor	0.03	0.11	-0.08	0.00
Assistant Professor	0.05	0.09	-0.04	0.00
Clinical Professor	0.02	0.07	-0.05	0.00
Clinical Associate	0.03	0.01	0.02	0.01
Fellow in Medicine	0.03	0.00	0.02	0.00
Instructor	0.15	0.08	0.06	0.00
Teaching Fellow	0.17	0.01	0.16	0.00
Research Fellow	0.11	0.05	0.06	0.00
Research Associate	0.05	0.11	-0.06	0.00
Board Member	0.04	0.02	0.02	0.01
Multiple Positions	0.16	0.25	-0.10	0.00
Emeritus	0.03	0.09	-0.06	0.00
Nb. Obs.	2,499	714		

28% of all entries in the Harvard directory in 1955 are included in the MoS

32% of MoS are full professors (compared with 9% in Harvard's Directory)

11% of MoS are associate professors (compared with 3% in Harvard's Directory)

9% of MoS are assistant professors relative 5% in Harvard's Directory

Full professors are more likely to be included in MoS

28% of all entries in the Harvard directory in 1955 are included in the MoS

32% of MoS are full professors (compared with 9% in Harvard's Directory)

11% of MoS are associate professors (compared with 3% in Harvard's Directory)

9% of MoS are full professors relative 5% in Harvard's Directory.

Matching Scientists with Publications

Large number of potential matches: 280,015,237 MAG authorids.

Three major data challenges:

1. Typos
2. Synonyms
3. Homonyms

Synonyms



- ▶ Alternative representations of the same name
- ▶ For instance: Friedrich August von Hayek
 - ▶ August von Hayek
 - ▶ Friedrich August von Hayek
 - ▶ F. A. von Hayek

Homonyms

Multiple scientists with the same name

For instance: Joseph Ackerman in the MoS

- ▶ Ackerman Francis Joseph (Chemistry)
- ▶ Ackerman I Joseph (Organic Chemistry)
- ▶ Ackerman Joseph (Agricultural Economics)

Matching Red-ucators with MAG and MoS Scientists

Step 1: Extract MAG authors with at least 1 publication before 1970

-from 280,015,237 to 14,959,782 authorids.

Step 2: Match MAG authors with MOS and Red-ucators using first, last and middle names

- 1,344,655 MAG authorids matched with MoS - 72,314 MAG authorids matched with Red-ucators.

Step 3: Eliminate false positives using field of studies and date of birth - 673,542 MAG authorids matched with MoS

- 7,588 MAG authorids matched with Red-ucators

Step 4: Checking for false negative matches using full name and self-citations as well as common co-authors - 541,695 MAG authorids matched with 64,384 MoS - 4,855 MAG authorids matched with 315 Red-ucators

315 Red-ucators, 5,073 Scholars in MAG, and 36,230 in MOS

Scientists

- ▶ who have at least one publication before 1949
- ▶ share a field with a Red-ucator.
- ▶ 315 Red-ucators
- ▶ 5,074 MAG scholars with a publication between 1940 and 1948 and in a university that is in the top 50 US institutions today (U.S. News & World Report)
- ▶ 36,230 MoS

Red-ucators were More Successful (in terms of Pubs and Cites) than other scholars before 1949 pre-1949

Variables	MoS					MAG				
	Reds	No Reds	Diff	St. Error	Obs	Reds	No Reds	Diff	St. Error	Obs
Female	0.12	0.05	0.07	0.01	36545	-	-	-	-	-
Birth Year	1,893.713	1904.43	-10.50	0.83	36545	-	-	-	-	-
First Pub	1924	1932.45	-8.45	0.60	36545	1924	1931.93	-7.93	0.73	5389
Publications 1900-49	32.97	10.61	22.36	0.89	36545	32.97	17.85	15.11	1.78	5389
Publications 1940-49	11.63	4.99	6.64	0.40	36545	11.63	7.97	3.66	0.68	5389
Citations 1900-49 pubs	54.90	14.89	40.01	2.46	36545	54.90	38.55	16.36	5.43	5389
Citations 1940-49 pubs	24.33	8.42	15.91	1.25	36545	24.33	21.32	3.01	2.64	5389
Avg # Coauthors 1900-49	1.70	2.03	-0.33	0.09	36545	1.70	2.04	-0.34	0.07	5389

Compared with MoS, Red-ucators were Older, More Prominent, and More Likely to Be Female

Variables	Reds	No Reds	Diff	St. Error	Obs
Female	0.12	0.05	0.07	0.02	36373
Birth year	1894.71	1904.43	-9.72	0.98	36373
Born US	0.15	0.12	0.03	0.03	36373
Master	0.29	0.25	0.04	0.04	36373
Phd	0.10	0.22	-0.12	0.03	36373
Military	0.62	0.61	0.02	0.04	36373
Societies	0.05	0.05	0	0.02	36373
Awards	0.85	0.93	-0.08	0.02	36373
First Pub	1921.42	1932.45	-11.03	0.89	36373
Publications pre-49	50.66	10.61	40.05	1.31	36373
Publications 40-49	16.90	4.99	11.90	0.59	36373
Citations pre-49 pubs	105.06	14.89	90.17	3.61	36373
Citations 40-49 pubs	46.55	8.42	38.13	1.84	36373
Avg # Coauthors pre-49	1.71	2.03	-0.32	0.14	36373

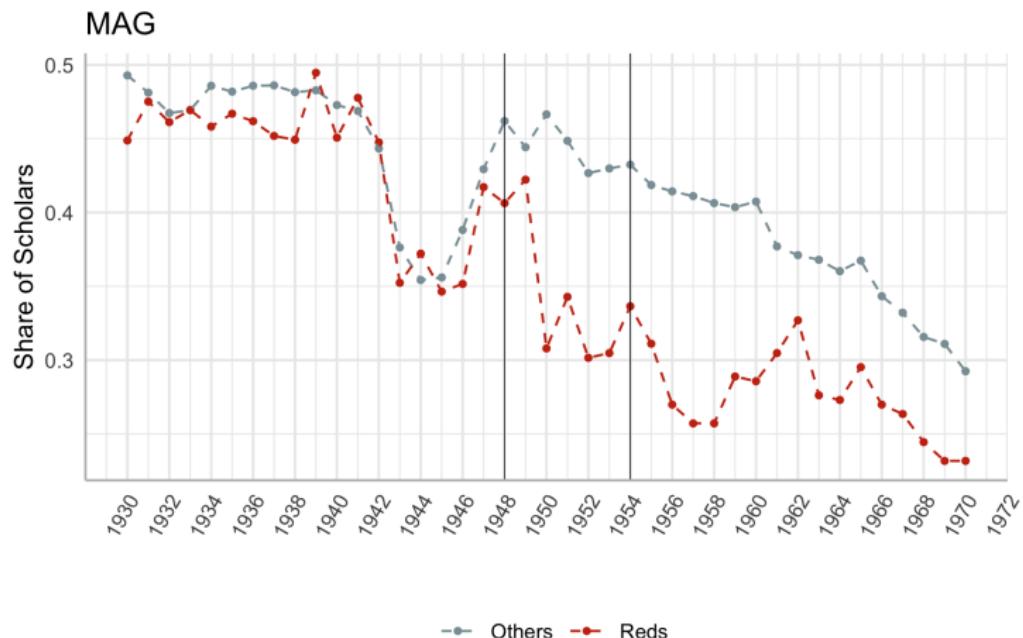
...but Red-ucators are similar to MoS in terms of military experience and membership in scientific societies

Variables	Reds	No Reds	Diff	St. Error	Obs
Female	0.12	0.05	0.07	0.02	36373
Birth year	1894.71	1904.43	-9.72	0.98	36373
Born US	0.15	0.12	0.03	0.03	36373
Master	0.29	0.25	0.04	0.04	36373
Phd	0.10	0.22	-0.12	0.03	36373
Military	0.62	0.61	0.02	0.04	36373
Societies	0.05	0.05	0	0.02	36373
Awards	0.85	0.93	-0.08	0.02	36373
First Pub	1921.42	1932.45	-11.03	0.89	36373
Publications pre-49	50.66	10.61	40.05	1.31	36373
Publications 40-49	16.90	4.99	11.90	0.59	36373
Citations pre-49 pubs	105.06	14.89	90.17	3.61	36373
Citations 40-49 pubs	46.55	8.42	38.13	1.84	36373
Avg # Coauthors pre-49	1.71	2.03	-0.32	0.14	36373

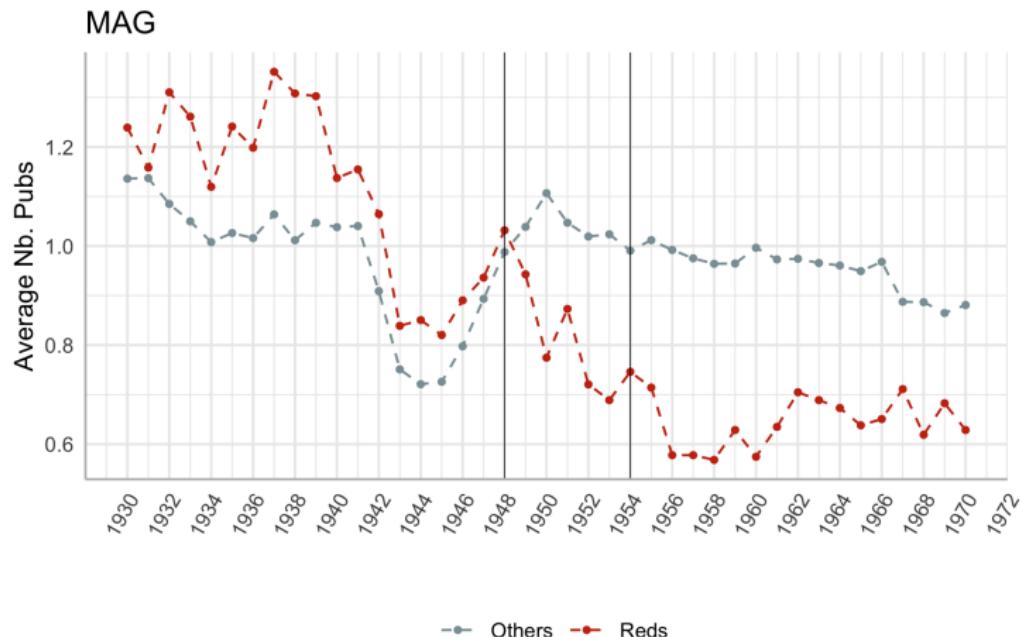
Outline

1. Introduction
2. Historical Background
 - ▶ McCarthyism
 - ▶ The Red-ucators Pamphlets
3. Data
 - ▶ Entries in the Red-ucators
 - ▶ The American Men of Science (MoS)
 - ▶ Scientific Output: Publications and Citations
4. Results
 - ▶ Publications
 - ▶ Citations

Red-ucators Are Less Likely to Publish after Accusation - Compared with MAG



Red-ucators Publish Fewer Papers after Accusation - Compared with MAG



Empirical Specification: Difference-in-Difference

$$y_{it} = \beta_0 + \beta_1 \times Reds_i \times Post_t + \lambda_i + \lambda_t + \varepsilon_{it}$$

- ▶ y_{it} Publication outcomes between 1935-55 or 1935-60
 1. Indicator = 1 if scholar i at time t published a paper
 2. Number of publications in year t
- ▶ $Post_t$ equals 1 for years > 1949
- ▶ $Reds_i$ indicates Red-ucators
- ▶ Scholar and Year FE
- ▶ Standard error clustered at scholar level

After 1948, Red-ucators are 10% Less Likely to Publish

Period	1935-1955				1935-1960				
	Outcome	Pr(any pub)		Nb Pubs		Pr(any pub)		Nb Pubs	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reds × Post		-0.041*** (0.015)	-0.039** (0.019)	-0.289*** (0.067)	-0.243*** (0.088)	-0.054*** (0.015)	-0.055*** (0.019)	-0.339*** (0.066)	-0.291*** (0.079)
Ind. & Year FE		√	√	√	√	√	√	√	
First Pub × Post			√		√		√	√	
Field × Post			√		√		√	√	
Mean Outcome Reds	0.42	0.42	1.07	1.07	0.42	0.42	1.07	1.07	
Obs	95,948	95,948	95,948	95,948	122,893	122,893	122,893	122,893	
R ²	0.299	0.300	0.390	0.392	0.286	0.287	0.381	0.383	
Adj R ²	0.257	0.258	0.354	0.355	0.253	0.254	0.353	0.354	

After 1948, Red-ucators Publish 25% Fewer Papers

Period	1935-1955				1935-1960				
	Outcome	Pr(any pub)		Nb Pubs		Pr(any pub)		Nb Pubs	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reds × Post		-0.041*** (0.015)	-0.039** (0.019)	-0.289*** (0.067)	-0.243*** (0.088)	-0.054*** (0.015)	-0.055*** (0.019)	-0.339*** (0.066)	-0.291*** (0.079)
Ind. & Year FE		√	√	√	√	√	√	√	
First Pub × Post			√		√		√	√	
Field × Post			√		√		√	√	
Mean Outcome Reds	0.42	0.42	1.07	1.07	0.42	0.42	1.07	1.07	
Obs	95,948	95,948	95,948	95,948	122,893	122,893	122,893	122,893	
R ²	0.299	0.300	0.390	0.392	0.286	0.287	0.381	0.383	
Adj R ²	0.257	0.258	0.354	0.355	0.253	0.254	0.353	0.354	

Controlling for Differences in Publication Patterns by Age and Field

$$y_{it} = \beta_0 + \beta_1 \times Reds_i \times Post_t + \beta_2 \times X_i \times Post_t + \lambda_i + \lambda_t + \varepsilon_{it}$$

- y_{it} Publication outcomes between 1935-55 or 1935-60 1.

Indicator = 1 if scholar i at time t published a paper

2. Number of publications in year t

- ▶ $Post_t$ equals 1 for years > 1949
- ▶ $Reds_i$ indicates Red-ucators
- ▶ X_i pre-1949 scholar level characteristics: first year of publication, field
- ▶ Scholar and Year FE
- ▶ Standard error clustered at scholar level

After 1948, Red-ucators are 10% Less Likely to Publish and Publish 25% Fewer Papers

Outcome	1935-1955				1935-1960			
	Pr(any pub)		Nb Pubs		Pr(any pub)		Nb Pubs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reds × Post	-0.041*** (0.015)	-0.039** (0.019)	-0.289*** (0.067)	-0.243*** (0.088)	-0.054*** (0.015)	-0.055*** (0.019)	-0.339*** (0.066)	-0.291*** (0.079)
Ind. & Year FE	√	√	√	√	√	√	√	√
First Pub × Post		√		√		√		√
Field × Post		√		√		√		√
Mean Outcome Reds	0.42	0.42	1.07	1.07	0.42	0.42	1.07	1.07
Obs	95,948	95,948	95,948	95,948	122,893	122,893	122,893	122,893
R ²	0.299	0.300	0.390	0.392	0.286	0.287	0.381	0.383
Adj R ²	0.257	0.258	0.354	0.355	0.253	0.254	0.353	0.354

Effects persist after 1956

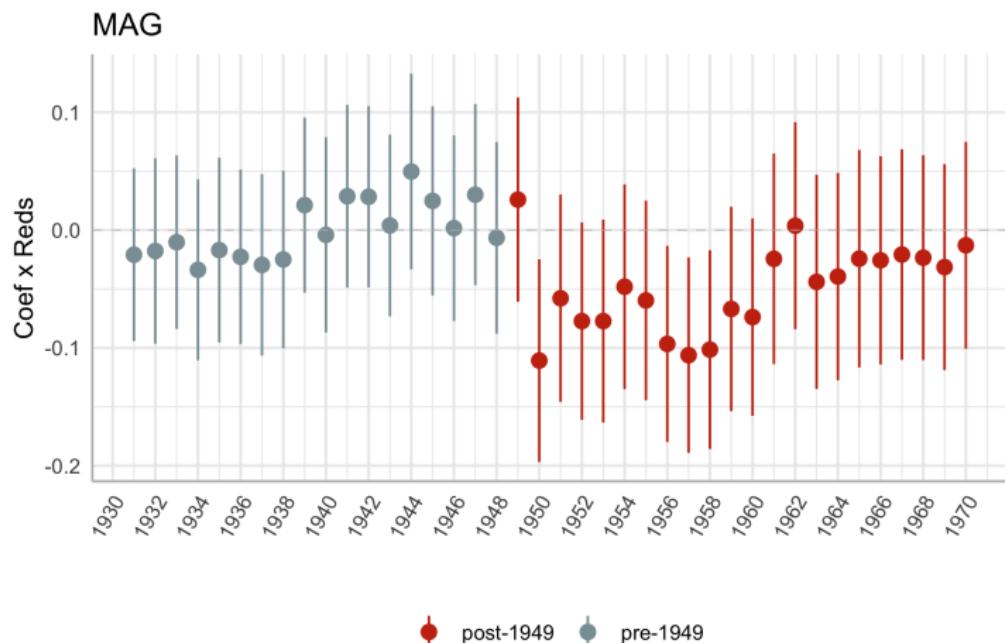
Period	1935-1955				1935-1960				
	Outcome	Pr(any pub)		Nb Pubs		Pr(any pub)		Nb Pubs	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Reds × Post		-0.041*** (0.015)	-0.039** (0.019)	-0.289*** (0.067)	-0.243*** (0.088)	-0.054*** (0.015)	-0.055*** (0.019)	-0.339*** (0.066)	-0.291*** (0.079)
Ind. & Year FE		√	√	√	√	√	√	√	
First Pub × Post			√		√		√	√	
Field × Post			√		√		√	√	
Mean Outcome Reds	0.42	0.42	1.07	1.07	0.42	0.42	1.07	1.07	
Obs	95,948	95,948	95,948	95,948	122,893	122,893	122,893	122,893	
R ²	0.299	0.300	0.390	0.392	0.286	0.287	0.381	0.383	
Adj R ²	0.257	0.258	0.354	0.355	0.253	0.254	0.353	0.354	

Event Study

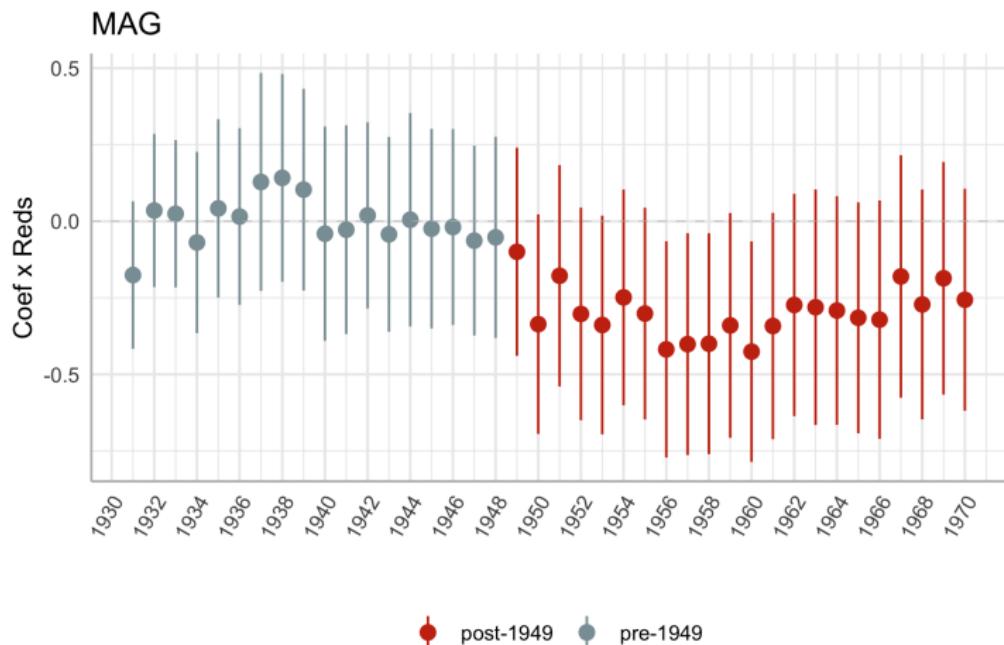
$$y_{it} = \beta_0 + \sum_{t=1930}^{1970} \beta_t \times Reds_i + \beta_2 \times X_i \times Post_t + \lambda_i + \lambda_t + \varepsilon_{it}$$

- ▶ y_{it} measures changes in the probability or number of publications:
 1. Indicator equals 1 if scholar i publishes at least once in year t
 2. Number of publications year t

Red-ucators Suffer an Immediate & Persistent Decline in Probability of Publishing

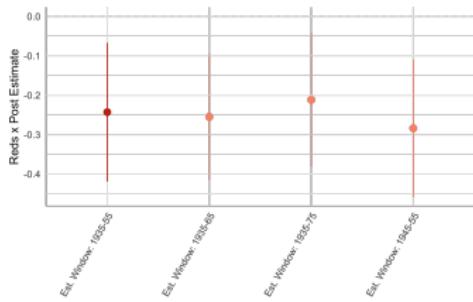
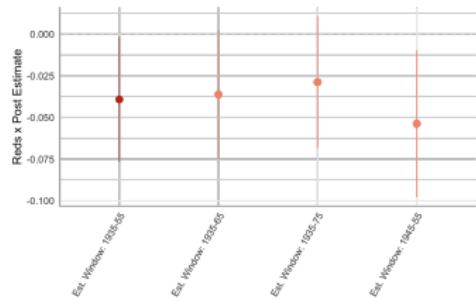


Red-ucators Publish Fewer Papers



Robustness to Alternative Estimation Windows

- ▶ Baseline: 1935-1955
- ▶ Alternatively: 1. 1945-1955, 2. 1935-1965, 3. 1935-1975

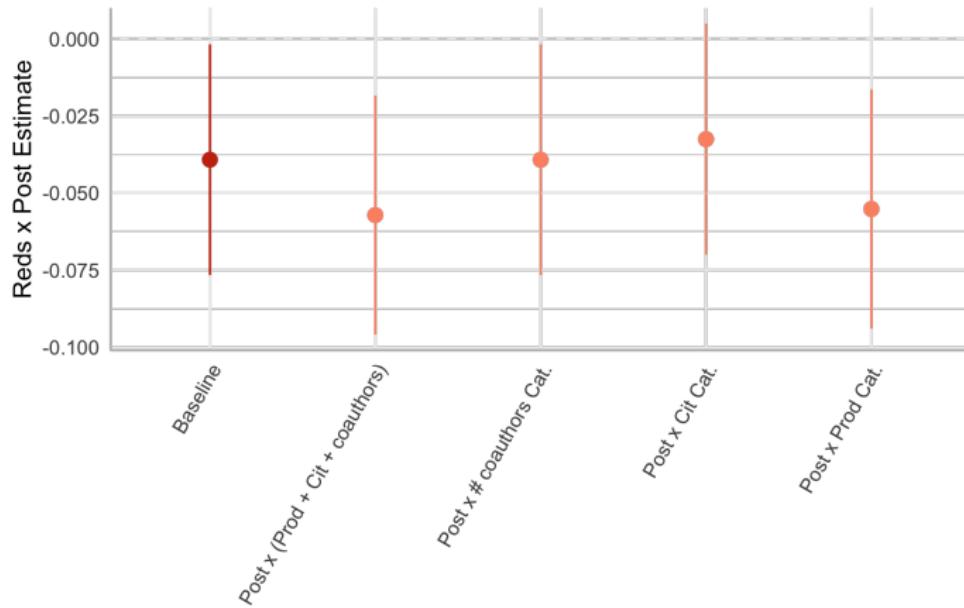


Controlling for Scholar-Specific Characteristic x Post

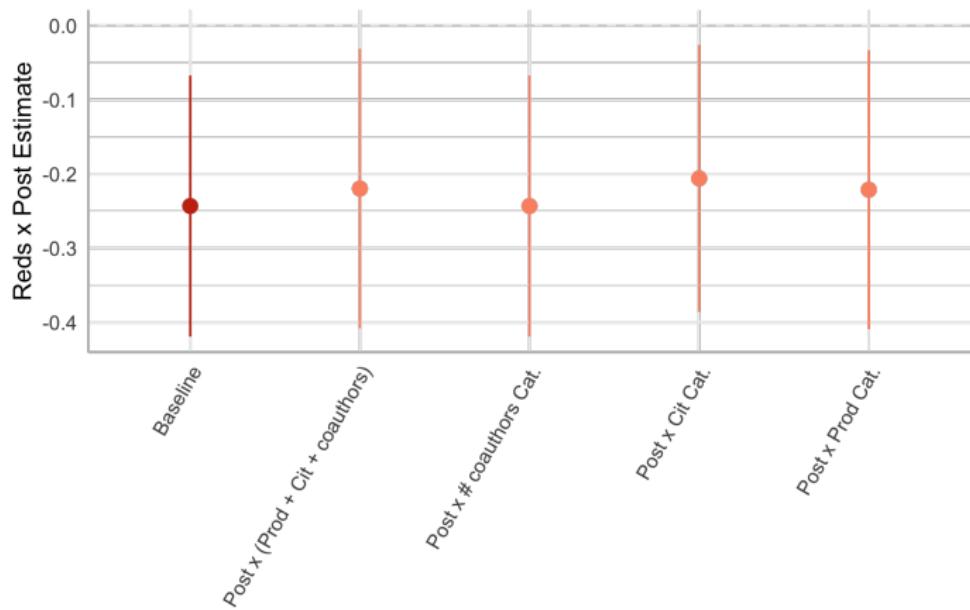
Control for with *post* x pre-1949 characteristics of scholars

1. Productivity: quintiles of pubs 1900-49
2. Citations: quintiles of citations 1900-49
3. Coauthors: median of average number of coauthors per paper 1900-49

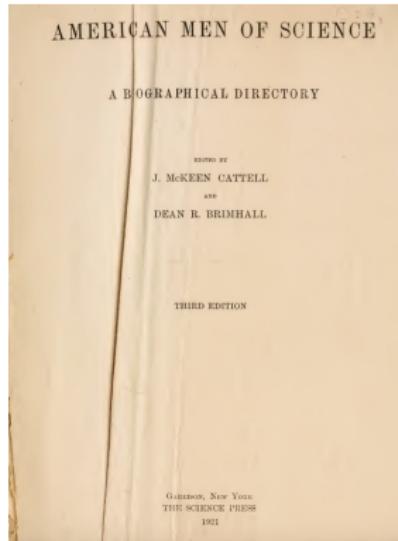
Robustness Checks: Pr(any pub)



Robustness Checks: Number of Pubs

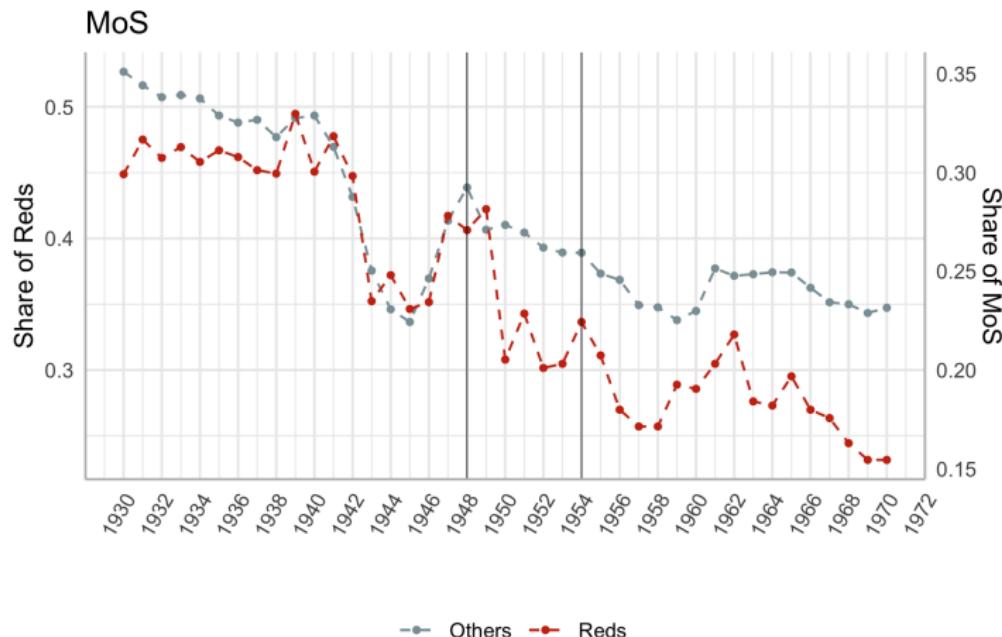


Comparisons with MoS as an Alternative Control

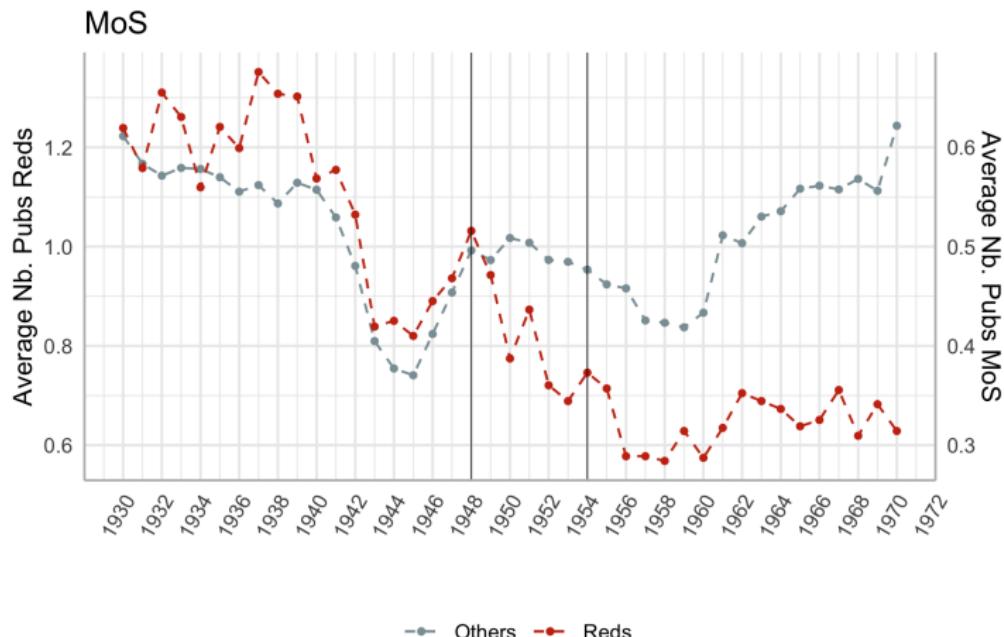


- ▶ "...initially intended as a reference list for the Carnegie Institution of Washington.... But the chief service it should render is to make men of science acquainted with one another and with one another's work." (Cattell 1921)
- ▶ All members of scientific societies
- ▶ Includes male and female scientists in Canada and the US
- ▶ Hand collected biographies of all scientists in MoS in 1921 and 1956

Red-ucators Are Less Likely to Publish after Accusation - Compared with MoS



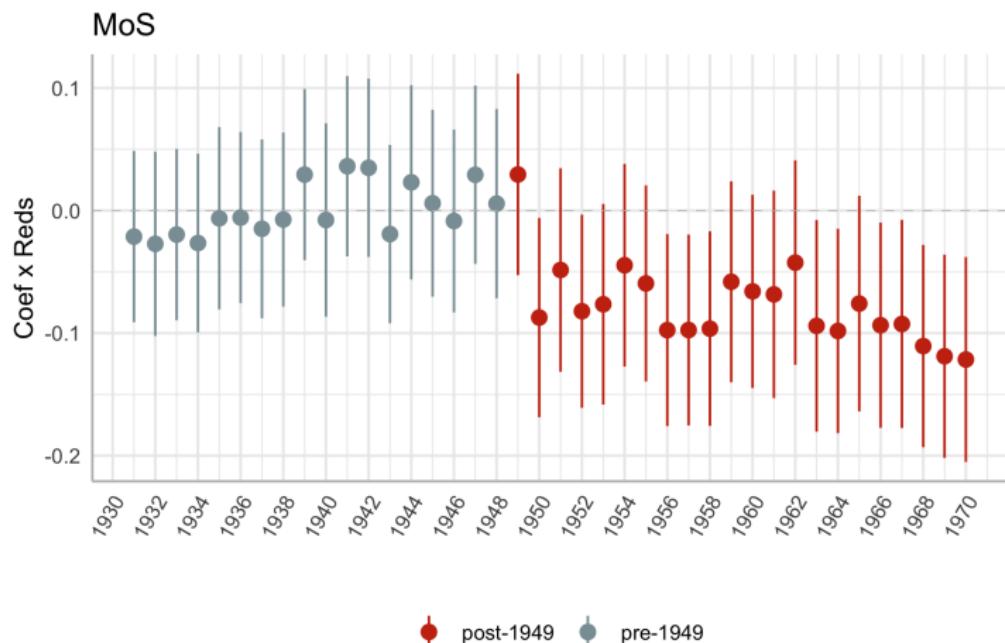
Red-ucators Publish Fewer Papers - Compared with MoS



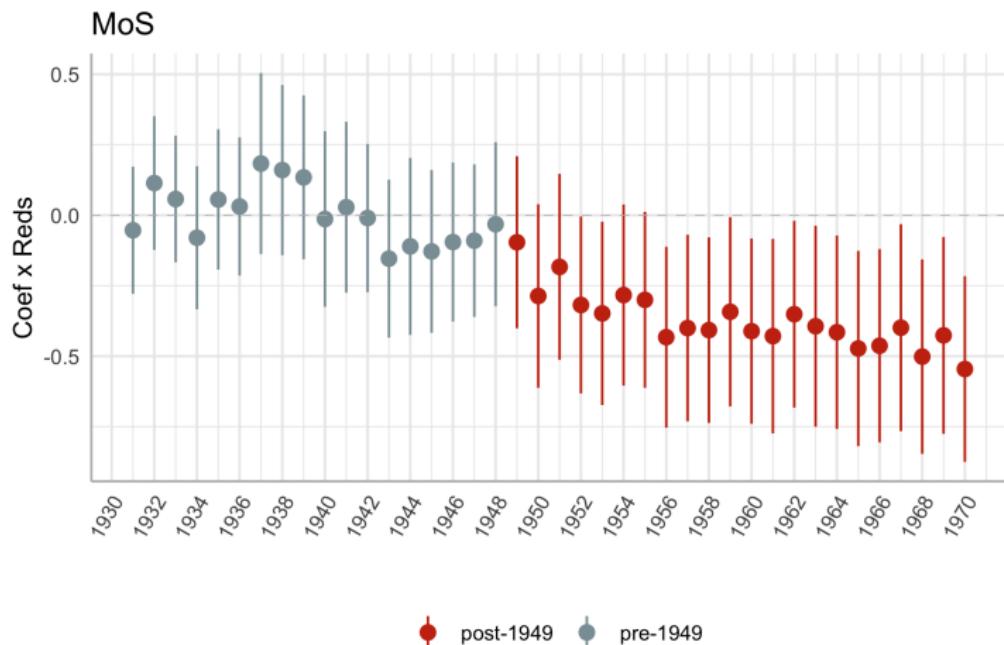
After 1948, Red-ucators are 10% Less Likely to Publish and 25% decline in average # of Publications - Compared with MoS

Period	1935-1955				1935-1960			
Outcome	Pr(any pub)		Nb Pubs		Pr(any pub)		Nb Pubs	
Reds × Post	(1) -0.035** (0.014)	(2) -0.046** (0.018)	(3) -0.227*** (0.064)	(4) -0.203*** (0.077)	(5) -0.049*** (0.014)	(6) -0.062*** (0.018)	(7) -0.287*** (0.064)	(8) -0.281*** (0.075)
Ind. & Year FE	√	√	√	√	√	√	√	√
First Pub × Post		√		√		√		√
Field × Post		√		√		√		√
Mean Outcome Reds	0.42	0.42	1.07	1.07	0.42	0.42	1.07	1.07
Observations	660,178	660,178	660,178	660,178	842,903	842,903	842,903	842,903
R ²	0.287	0.289	0.364	0.365	0.281	0.284	0.357	0.358
Adjusted R ²	0.245	0.248	0.327	0.328	0.249	0.251	0.328	0.329

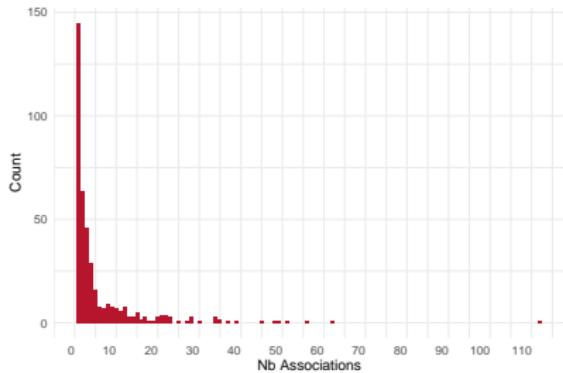
Red-ucators Suffer an Immediate & Persistent Decline in Probability of Publishing



Red-ucators Publish Fewer Papers



Did the Intensity (Number of) Accusations Matter?



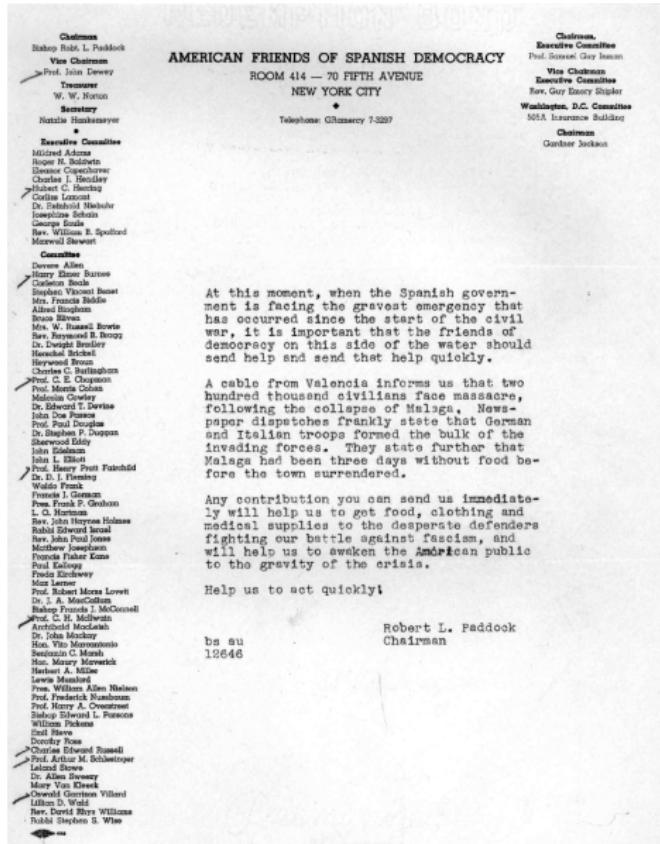
- ▶ Mean number of accusations is 6.158; Median is 2.000

Did the Nature of Accusations Matter?



- ▶ Well-known Communist associations - Daily Worker (Newspaper published by the Communist Party)

Did the Nature of Accusations Matter?



Less clear

- ▶ American Friends of Spanish Democracy, supporting Loyalist government in Spanish Civil War
- ▶ Scientists opposing the publication of the Hollywood Blacklist

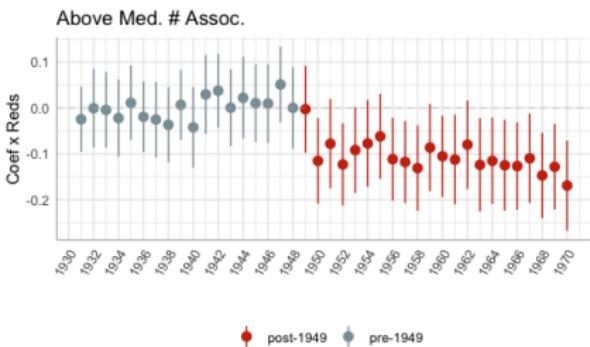
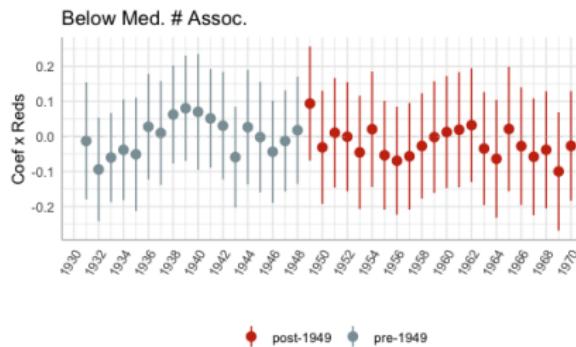
Did the Intensity of Accusations Matter?

Period	1935-1955					
Outcome	Pr(any pub)			Nb Pubs		
Reds × Post	−0.054*** (0.015)			−0.289*** (0.067)		
Below Med Assoc × Post	−0.017 (0.027)			−0.305** (0.134)		
Ab Med Assoc × Post	−0.053*** (0.017)			−0.281*** (0.073)		
Other Assoc × Post	−0.024 (0.018)			−0.268*** (0.081)		
Well-Known Com Assoc × Post	−0.073*** (0.024)			−0.327*** (0.111)		
Ind. & Year FE	✓	✓	✓	✓	✓	✓
Time Period	35-55	35-55	35-55	35-55	35-55	35-55
Mean	0.43	0.43	0.43	0.93	0.93	0.93
Observations	95,948	95,948	95,948	95,948	95,948	95,948
R ²	0.299	0.299	0.299	0.390	0.390	0.390
Adjusted R ²	0.257	0.257	0.257	0.354	0.354	0.354

Effects Persist and Intensify over Time

Period	1935-1960					
Outcome	Pr(any pub)			Nb Pubs		
Reds × Post	−0.054*** (0.015)			−0.339*** (0.066)		
Below Med Assoc × Post	−0.027 (0.027)			−0.335** (0.134)		
Ab Med Assoc × Post	−0.067*** (0.017)			−0.341*** (0.072)		
Other Assoc × Post	−0.038** (0.018)			−0.324*** (0.080)		
Well-Known Com Assoc × Post	−0.084*** (0.025)			−0.367*** (0.110)		
Ind. & Year FE	✓	✓	✓	✓	✓	✓
Time Period	35-60	35-60	35-60	35-60	35-60	35-60
Mean	0.43	0.43	0.43	0.93	0.93	0.93
Observations	122,893	122,893	122,893	122,893	122,893	122,893
R ²	0.286	0.286	0.286	0.381	0.381	0.381
Adjusted R ²	0.253	0.253	0.253	0.353	0.353	0.353

Scholars With More Accusations Experience a Larger Loss in Pubs



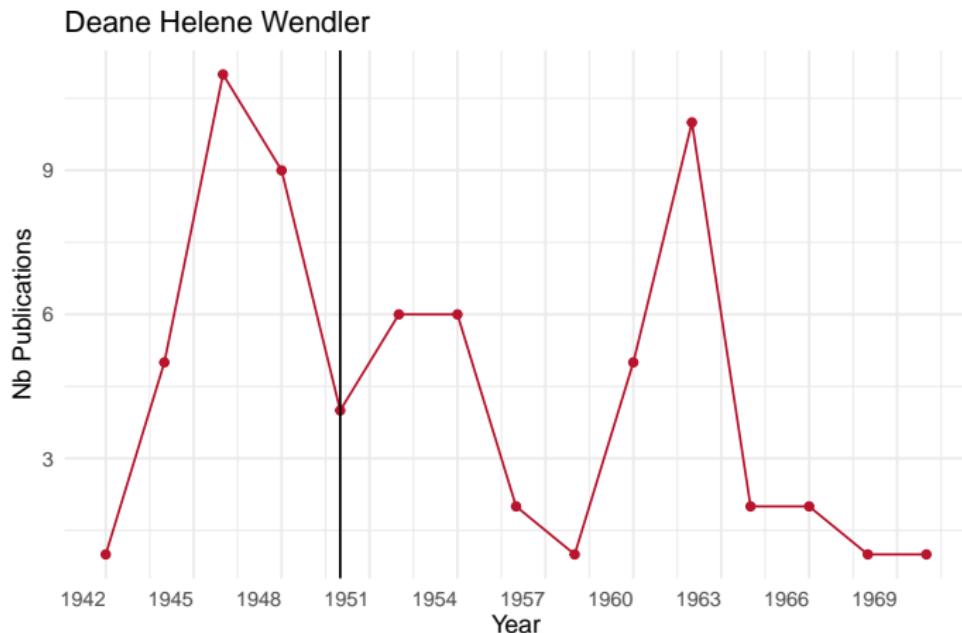
Did Gender Matter?



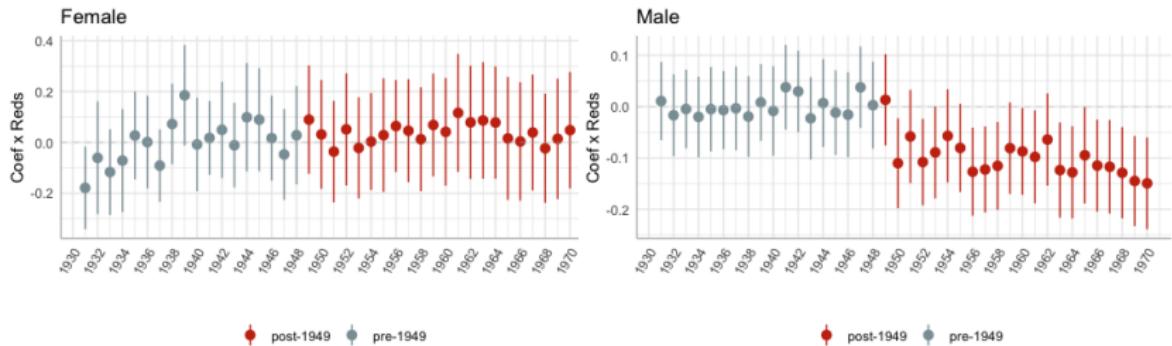
Helene Wendler Deane, distinguished histochemist (1917-1966)

- ▶ Joins Harvard's Department of Anatomy in 1947
- ▶ Red-ucators: Denunciation of Hartley Committee, 1-1-49
- ▶ Following false accusations of Communist affiliations, she is denied tenure in 1953
- ▶ In 1957, she becomes Professor of Anatomy at the Albert Einstein College of Medicine in New York

Wendler Publishes Less after She is Accused



Only Male Scholars Are Less Likely to Publish



Outline

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4. Results
 - ▶ Publications
 - ▶ Citations

Did Red-ucators Existing Work get Cited Less?

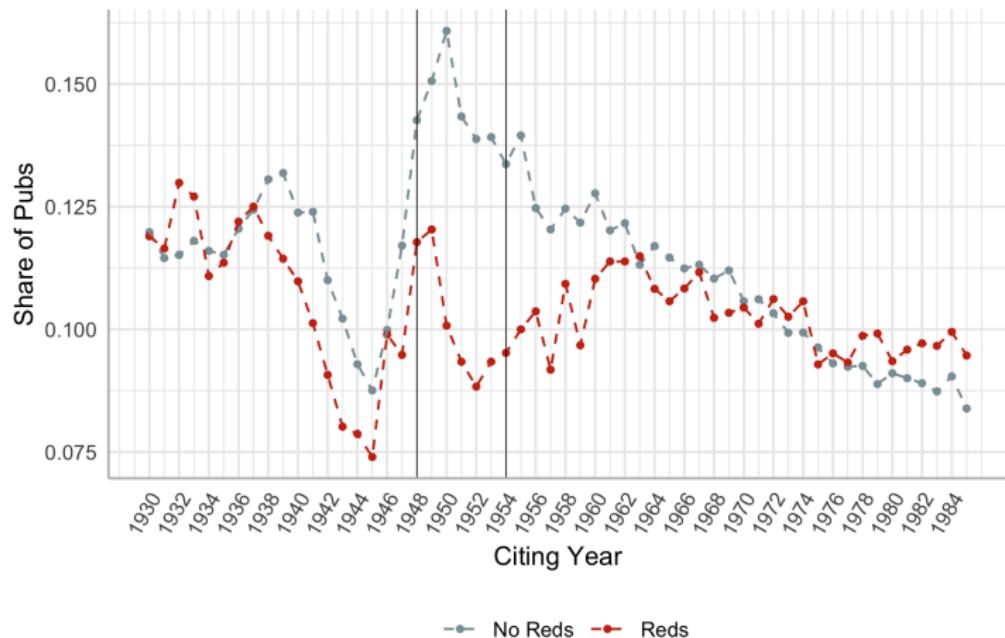
Publications reflect scholar's productivity:

1. Red-ucators were 10% less likely to publish and they published 25% fewer papers compared with MAG
2. Red-ucators are 10% less likely to publish and they publish 24% fewer papers compared with MoS

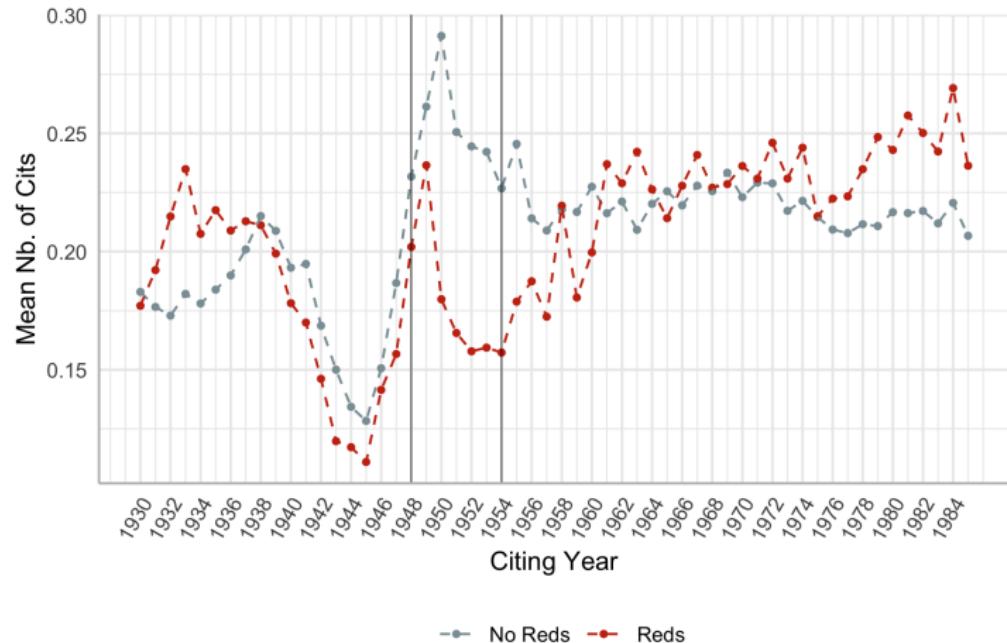
Now, examine reaction of their environment (rather than own productivity)

- ▶ Use citations to pre-1949 pubs by Red-ucators as a measure for changes in reception of their existing work

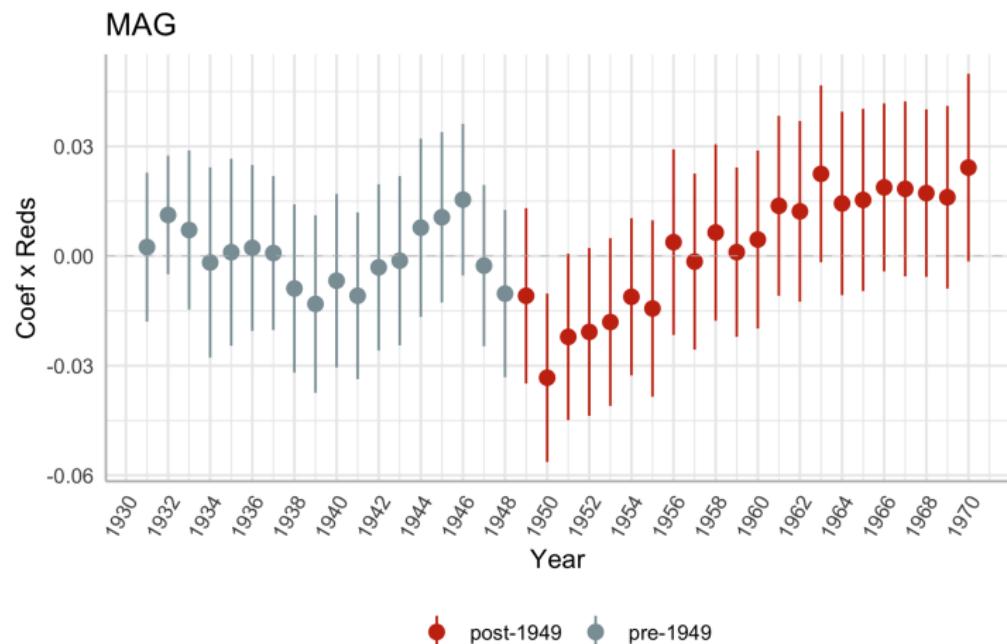
Pre-1949 Papers by Red-ucators Are Less Likely to Get Cited Through 1950s



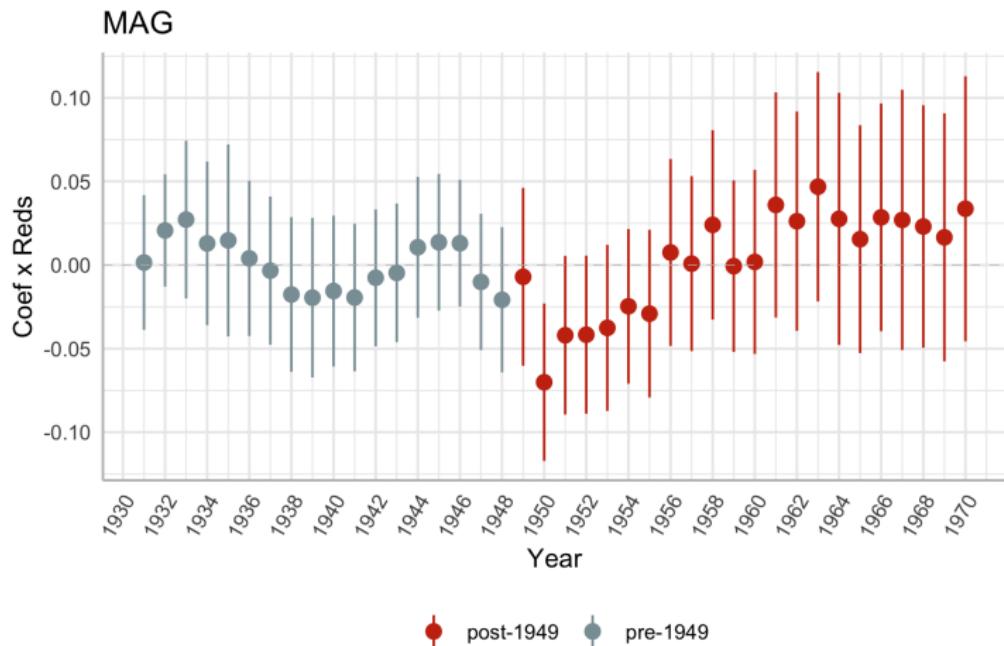
Pre-1949 Papers by Red-ucators Get Fewer Cites in 1950s, but then Recover and are Highly Cited into 1980s



Papers by Red-ucators are Less Likely to be Cited Immediately after 1949, but Start to Recover after 1956



Papers by Red-ucators Receive Fewer Citations Until 1956



Findings

Accusations - even without evidence - had a significant impact on science

1. Red-ucators are less likely to publish - and they publish fewer paper after the accusations
2. Their pre-1949 paper are less likely to be cited and they receive fewer citations after 1956
3. Scholars with more accusations (and men) suffer more

Future investigations:

1. Effects on students and co-authors
2. Differential effects by types of organizations
3. Aggregate effect of McCarthyism on Scientific production and collaboration