



THE CRESCENT GROUP

We were asked to undertake a research project to determine the extent of publicly available information about asbestos – its benefits, hazards, and controllability - across the span of the 20th Century. The research provided the basis for an expert report by Yale Professor Theodore Marmor. A variation of that report follows. It clarifies a long and complex story about the rise and fall in the use of asbestos in America. Juries have rejected conspiracy claims as a result of this scholarship.

Report of Prof. Theodore R. Marmor

I. Introduction

I have been asked to assess what was likely known by reasonably attentive physicians, government officials, companies, union leaders and workers, and members of the general public in the United States, from the early 20th century through the mid-1980s, about the benefits and hazards of asbestos.

II. Qualifications

The attached curriculum vitae (see Appendix A) provides the details of my educational and professional background. Here I will highlight aspects of my professional experience that are most relevant to my analysis of issues in this case.

I received a Ph.D. in American Studies at Harvard. My course work and general examinations in this interdisciplinary program were in political philosophy, comparative politics, American history, and American politics. Between undergraduate studies, also at Harvard, and graduate school, I held a fellowship to Wadham College, Oxford, where I studied politics, philosophy, and economics.

I am Professor of Public Policy and Management and Professor of Political Science at Yale University. I currently teach at the Yale School of Management, and also at Yale Law School, where I am an adjunct professor and have taught a course on health politics, policy, and law.

I am a scholar of public policy, health, and health care. I am a member of the Institute of Medicine and a founding member of the National Academy of Social Insurance. I studied population health as a fellow of the Canadian Institute of Advanced Research, and with my colleagues there edited the book, *Why Some People Are Healthy and Others Are Not*. I was editor of the *Journal of Health Politics, Policy and Law* for five years.

Throughout my career, I have studied public health matters, such as asbestos, that have arisen from occupational, environmental, and other health hazards, and led to highly

contentious government regulation and litigation. More generally, I have studied a wide variety of health-related issues that have involved legislative and regulatory struggles among government actors, corporations, labor unions and other interests. I am an author or editor of eleven books and the author or co-author of over one hundred articles in peer-reviewed journals and other academic publications.

In addition to my academic research and writing, I have been actively involved in governmental efforts to achieve health care objectives and implement programs, first as special assistant to Wilbur Cohen, Undersecretary of the U.S. Department of Health, Education and Welfare. Since then I have served frequently as consultant or advisor on health issues to federal agencies, Congressional committees, and state governments, and I have testified regularly before committees of Congress.

I have also been a consultant to major corporations involved in the health care industry, including Schering-Plough and Astra-Zeneca, and have made numerous appearances on television and radio. With respect to asbestos specifically, I was retained as an expert in connection with the Celotex bankruptcy; I investigated the synergy between asbestos exposure and tobacco use as an expert in an Ohio case; and I was qualified to testify as an expert on historical awareness of the hazards of asbestos in West Virginia in October 2002.

III. Information Considered

In forming my opinions and conclusions, I worked with a team of researchers to identify and examine all available sources of information regarding awareness of asbestos benefits and hazards. We focused on the 20th century, mainly the period from 1920–1980. The research entailed the most extensive document search of my career.

The categories of information searched included: (1) medical literature; (2) public and occupational health literature, including that of the American Conference of Governmental Industrial Hygienists; (3) government documents, at both federal and state levels; (4) labor and union documents, including union publications, correspondence, speeches, and records of conference proceedings; (5) documents from nonprofit organizations, including the American Cancer Society and the National Safety Council;

- (6) print media, including major newspapers and magazines, as well as local publications;
- (7) broadcast media, such as television news and other films

IV. Summary of Findings

Section V below provides the details of my findings. However, in summary, I can state that information about asbestos hazards was extensive and readily available in every category of information source examined. Our research identified literally thousands of references to asbestos hazards, beginning in the early 20th century.

By the early 1930s, it was widely understood in the medical and public health communities that asbestos was a cause of a disease called asbestosis, a lung scarring that harmed workers with substantial and lengthy asbestos exposure. That information came to the attention of labor unions and was revealed at union conferences and in union publications. Government involvement in asbestos hazards dates back to the 1930s: some state governments began to cover asbestos-related diseases under their workers' compensation statutes, and soon thereafter established threshold limit values (TLVs) for occupational exposure to asbestos. More and more state governments took the same steps in the 1940s and 1950s. Widespread media reporting about the dangers of unprotected exposure to asbestos came later, following the recognition of asbestos as a potential carcinogen in the 1950s and 1960s.

V. Principal Findings

After reviewing the documents and other information identified in section III above, I have reached the following opinions and conclusions about what information was available, and what reasonably attentive observers would likely have known, regarding the benefits and hazards of asbestos.

A. Why Asbestos Was So Widely Used

There's a great difference between contemporary and historical views of asbestos. Given asbestos's current reputation, it's easy to forget its remarkable and highly valuable properties. But the word "asbestos" itself, which in Greek means unquenchable, gives an

indication of how this mineral was once viewed. Asbestos is natural and inexpensive mineral that is fireproof, has low thermal conductivity, has great tensile strength, and doesn't corrode. Because it's fibrous, asbestos can be easily combined with other materials (to which it can add considerable reinforcement), and even spun and woven into fabrics. The two subtitles of an 1896 *New York Times* article sum up what used to be the conventional view of asbestos and its characteristics: "WONDERFUL QUALITIES OF ASBESTOS, AND HOW IT IS USED. Pliable as Cotton, Yet Almost Indestructible—Molten Metal and Strong Acids Strained Through It—Protecting Buildings from Fire—Retaining Heat in Steam Pipes—Keeping Frost From Water Pipes—Its Uses in the Household."¹

Due to its many beneficial features, asbestos was widely prized for much of the 20th century. It was increasingly and extensively used in thousands of products, ranging from textiles to paper to brakes to building materials. Not least, asbestos was used in battleships to help them withstand fire caused by torpedoes. By 1979, worldwide asbestos production had reached approximately 5 million metric tons (or over 10 billion pounds) per year. In short, there's good reason that asbestos was called "the world's most wonderful mineral"² and the "magic mineral," and was classified as a strategic mineral in World War II.

Because of its considerable benefits, efforts to regulate asbestos, until quite recently, focused not on eliminating asbestos but on minimizing the health risks of asbestos while maintaining its use. Indeed, even those who were most vocal in calling for tighter regulation of asbestos nonetheless acknowledged its worth and importance. For instance, Dr. Irving Selikoff, in an article published by the American Medical Association in *Today's Health* (July 1970), said: "Asbestos is an extremely valuable material, and has become essential in modern industrial society. But improvements are needed to eliminate unnecessary exposure among asbestos workers and men in other building trades. And awareness of the potential risks of environmental contamination is

¹ "Resists Fire and Acids," *New York Times*, 28 June 1896.

² See A. Leonard Summers, *Asbestos and the Asbestos Industry: The World's Most Wonderful Mineral and Other Fireproof Materials* (London: Sir Isaac Pitman & Sons, 1919).

needed until our studies indicate just how far out into the general population the problem extends.”

B. Recognition of Asbestos Hazards by the Medical Community

Information about hazards of long-term uncontrolled exposure to asbestos appeared in the medical and public health literature in the 1920s, as doctors identified the disabling lung scarring that became known as asbestosis. The first example in the medical literature of a fatality being formally attributed, on the basis of pathological exam, to inhalation of asbestos dust, occurred in 1924 when the *British Medical Journal* published an article by William Cooke entitled “Fibrosis of the Lungs Due to the Inhalation of Asbestos Dust.”³ Cooke’s article was considered sufficiently important that an abstract was published a few months later in the *New England Journal of Medicine*,⁴ one of the two leading American medical journals.

In 1928, the other leading American medical journal, the *Journal of the American Medical Association*, published an editorial alerting physicians to the danger of asbestos inhalation.⁵ The journal’s editorial noted that many cases of asbestos seemed to have occurred other than those documented by Cooke, and asserted that “asbestosis, because of its dangers and unique pathologic features, deserves more attention than it has had.” At the time, more than 80 percent of American physicians belonged to the American Medical Association, and membership included, as it does now, a subscription to the journal.

By the late 1930s, the hazard of asbestos dust as a source of lung damage was generally accepted within the medical community. As a 1939 editorial in the *Journal of American Medical Association* stated, “Asbestosis, a definite form of pneumoconiosis, is now generally recognized as an industrial hazard.”⁶ Moreover, asbestosis was by this

³ W. E. Cook, “Fibrosis of the Lungs Due to the Inhalation of Asbestos Dust,” *British Medical Journal* 2 (1924): 147.

⁴ *New England Journal of Medicine* 191 (1924): 1179.

⁵ “Pulmonary Asbestosis,” *Journal of the American Medical Association* 50 (1928): 119–120.

⁶ “Asbestosis,” *Journal of the American Medical Association* 112 (1939): 2067–2068.

time covered in some general medical textbooks, such as *A Textbook of Medicine* (1936), by Charles Phillip Emerson, the Dean of the Indiana University School of Medicine.⁷

During the 1940s, there were a number of published case reports and other analyses identifying an association between asbestosis and lung cancer, and in 1949 a *Journal of the American Medical Association* editorial called for increased attention to the issue.⁸ The causal link between asbestosis and lung cancer was finally demonstrated with a major epidemiological study in 1955. In research published in the *British Journal of Industrial Medicine*, Sir Richard Doll showed that among 20-year asbestos workers, the risk of lung cancer was “on the order of 10 times that experienced by the general population.”⁹

In 1964, the *Journal of the American Medical Association* published the findings of a landmark study that examined the medical records of over 1500 members of the Insulators and Asbestos Workers’ Union local in New York and New Jersey.¹⁰ Headed by Irving Selikoff of Mt. Sinai Hospital, the study strongly confirmed the link between cancer and occupational exposure to asbestos. The findings were highly publicized and marked the beginning of widespread media coverage of asbestos.

A year later, in 1965, Selikoff and his colleagues published another major study of asbestos and cancer, this time in the *New England Journal of Medicine*.¹¹ This study found that mesothelioma was unusually common among cases of asbestosis, that asbestosis was unusually common among cases of mesothelioma, and that the incidence of mesothelioma was extremely high among asbestos workers. This confirmed the relationship between asbestos exposure and mesothelioma that had been strongly suspected since at least 1960, when research published in the *British Journal of Industrial*

⁷ Charles Phillips Emerson, *A Textbook of Medicine* (Philadelphia: J. B. Lippincott Company, 1936).

⁸ “Asbestos and Cancer of the Lung,” *Journal of the American Medical Association*, 13 August 1949.

⁹ Richard Doll, “Mortality from Lung Cancer in Asbestos Workers,” *British Journal of Industrial Medicine* 12 (1955): 81–86.

¹⁰ Irving J. Selikoff, Jacob Churg, and E. Culyer Hammond, “Asbestos Exposure and Neoplasia,” *Journal of the American Medical Association* 188 (1964): 22–26.

¹¹ Irving J. Selikoff, Jacob Churg, and E. Culyer Hammond, “Relation Between Exposure to Asbestos and Mesothelioma,” *New England Journal of Medicine* 272 (1965): 560–565.

Medicine showed a striking concentration of mesothelioma cases in a region of South Africa where the crocidolite type of asbestos was mined.¹²

C. Public Health Authorities and Early State TLVs

As early as 1918, a U.S. government publication identified the poor health experience of asbestos workers. In that year, the U.S. Department of Labor's Bureau of Labor Statistics published a report entitled "Mortality from Respiratory Diseases in Dusty Trades." The report, authored by Frederick Hoffman, a statistician with the Prudential Insurance Company, stated: "It may be said, in conclusion, that in the practice of American and Canadian life insurance companies asbestos workers are generally declined on account of the assumed health-injurious conditions of industry." The report also said: "There is evidently an urgent need for a more qualified and extensive investigation of the health aspects of asbestos manufacture."

By the 1930s, the topic of asbestos-related disease was being studied by some state governments. In 1934, for example, the Pennsylvania Department of Labor published a study finding that 25 percent of surveyed asbestos workers had asbestosis.

In 1938, the U.S. Public Health Service published *A Study of Asbestosis in the Asbestos-Textile Industry*. Conducted at the behest of the Surgeon General, the Public Health Service study came up with a preliminary recommendation that the concentration of dust in the air be kept below 5 million particles per cubic foot (5 MPPCF). This recommendation was based on the observation that no cases of asbestosis appeared below this threshold.

In 1939, the Annual Report of the Surgeon General of the U.S. Navy, a study of diseases and injuries in the U.S. Navy, acknowledged the risk of asbestosis, again showing early U.S. government knowledge of the hazards of asbestos. The report recommended installing protective measures, such as exhaust blowers to remove asbestos at the source of exposure.

¹² J. C. Wagner, C. A. Sleggs, and P. Marchand, "Diffuse Pleural Mesothelioma and Asbestos Exposure in North Western Cape Province," *British Journal of Industrial Medicine* 17 (1960): 260–271.

By 1946, several states, including California, Ohio, Massachusetts, and Oregon, had set standards for permissible air concentration relating to occupational asbestos exposure. In that year, members of the newly-formed American Conference of Governmental Industrial Hygienists (ACGIH), almost all of whom were employed by state and federal government agencies, attempted to set “Threshold Limit Values” (or TLVs) for a long list of substances to which American workers were exposed, including asbestos. Plainly, the inclusion of asbestos demonstrated that industrial hygienists were well aware of the need to control occupational exposure to asbestos. The ACGIH standards, with the 5 MPPCF TLV for asbestos, were subsequently adopted by many states, including Texas, which did so in 1958.

Some state governments began, as early as the 1930s, to cover asbestos-related diseases under their workers’ compensation statutes. For instance, North Carolina covered asbestos-related diseases starting in 1935. Pennsylvania and Washington covered them in 1937, and many other states followed suit in the 1940s and 1950s. (Texas included asbestosis in workers’ compensation coverage of occupational diseases in 1947.) In some instances, the circumstances leading to the coverage were highly publicized. When North Carolina amended its Workmen’s Compensation Act in 1935 to include coverage for 27 scheduled diseases, including asbestosis, it was in response to a North Carolina Supreme Court ruling that asbestosis, if due to an employer’s failure to prevent asbestos exposure, was an injury “by accident” and therefore compensable under the state Workmen’s Compensation Act. In 1935 as well, Johns Manville faced civil suits from 22 former workers at an Illinois plant who alleged injury from workplace exposure to asbestos and other dusts. When a federal court ruled that the workers had no right to sue Manville or to bring workers’ compensation claims, the Illinois legislature amended the state’s compensation laws to include occupational disease.

Clearly, specific coverage of asbestosis in workers compensation statutes indicates awareness of asbestosis on the part of government officials. Beyond that, however, most expansions in workers’ compensation coverage resulted not from isolated actions of state officials, but from the lobbying of organized labor.

D. Labor Union Knowledge and Awareness of the Hazards of Asbestos

The dangers of long-term unprotected exposure to asbestos were by the early 1930s recognized by labor organizations involved with asbestos-related industries, such as mining, milling, and textiles. These labor organizations addressed the problem of occupational exposure, reporting on asbestos risks at conventions and in their own publications. They lobbied for workers' compensation coverage of asbestos diseases, and later on funded medical research on asbestos disease among union workers.

In 1930, an article entitled "The Pulmonary Asbestos Menace" appeared in *The Asbestos Worker*,¹³ the official monthly journal of the International Association of Heat and Frost Insulators and Asbestos Workers (commonly known as the Asbestos Workers union), which was affiliated with the American Federation of Labor. The article highlighted both the benefits and dangers of asbestos, describing asbestos as a "very necessary product" while mentioning "chronic pulmonary fibrosis" as a hazard. Given that the first articles on asbestosis in medical journals appeared in the mid-1920s, this article illustrates the dissemination of knowledge from the medical literature to organized labor. The article also indicates that the asbestos workers union was aware of hazards of asbestos as early as 1930, and that information was available to union members.

In 1936, the *American Federationist*, self-described as "The Official Magazine of the American Federation of Labor," published the article, "Industrial Poisons," by Dr. Alice Hamilton, a medical doctor and noted labor activist.¹⁴ In urging that additional attention be paid to industrial dusts, the article noted that knowledge about the dangers of industrial dusts is "still very limited *except* with regard to silica and asbestos."

In 1955, the *American Federationist* published an article, "Cancer in Industry," which listed asbestos among industrial causes of cancer. The article is noteworthy in several respects. The article was published in 1955, the same year that Sir Richard Doll published his landmark article establishing the connection between asbestos and lung cancer, again demonstrating how attuned the unions were to the medical literature. (Another illustration of this dynamic occurred when Dr. Selikoff's influential study on

¹³ "The Asbestos Menace," *The Asbestos Worker*, September 1930, 9–11.

¹⁴ Alice Hamilton, "Industrial Poisons," *The American Federationist* 43 (1936): 707–713.

insulators and asbestos hazards that was published in the *Journal of American Medical Association* in April 1964 was reprinted within months in the November 1964 issue of *The Asbestos Worker*.) Also significant is that the editor of *The American Federationist* at the time was George Meany, who later that year became the first president of the AFL-CIO, serving in that position until 1979. And the article was written by Dr. Herbert Abrams, the Medical Director of Local 25 Chicago, Building Service Employees International Union. This illustrates that unions had medical directors focusing on the problem of occupational cancer on the local as well as national level.

At the 19th General Convention of their International Association in 1957, the asbestos workers union decided to promote medical research on occupational health risks among their members. As described in *The Asbestos Worker*: “Being well aware of the health hazards in the Asbestos industry, President Sickles requested authority for the General Executive Board to make a study of the health hazards … that will enable the Board to adopt any policies that will tend to protect the health of our International membership.”¹⁵ This demonstrates not only the awareness of asbestos hazards among union leadership, but affirmative steps to address the problem. Among those steps was to print a full-page warning, featuring a picture of the grim reaper and the headline “Wear Your Respirator,” in the November 1961 issue of *The Asbestos Worker*. Such an ominous warning, with its unmistakable connotation of death, demonstrates the seriousness of efforts to inform workers about the dangers of asbestos inhalation and to promote workplace safety practices. The warning also shows awareness of and attention to industrial health hazards at the local level, as it was developed through the efforts of C. V. Krieger of Local No. 28, Safety Superintendent at the Long Beach Naval Shipyard.

On August 19, 1968, at a special meeting, the General Executive Board of the asbestos workers union passed a \$10 assessment on the general membership for the further study of the hazards of asbestos. The assessment was placed against the accounts of local unions, who were given the option passing the assessment on to local membership.

¹⁵ *The Asbestos Worker*, October 1957, 1.

Asbestos workers knew enough about the hazards of asbestos exposure to lead them to seek hazard pay for work with insulation. During a 1969 proceeding of the Metal Trades Department of the AFL-CIO, workers resolved to seek hazard pay for ripping out insulation. The first “whereas” clause of the resolution acknowledged the risks of asbestosis and cancer from asbestos exposure.

In addition to *The Asbestos Worker*, there were several other union publications that published articles noting the hazards of asbestos. These included: (1) 1945 article “Asbestos Workers Get New Benefits” in *Textile Labor*; (2) 1969 article “TWUA Urges Action on Byssinois, Noise” in *Textile Labor*; (3) 1970 article “The Challenges We Face” in *Textile Labor*; (4) 1966 article “Health Hazards Among Roofers” in *The Journeyman, Roofer and Waterproofer*; (5) 1967 article “Cigarette Habit, Asbestos Exposure Increase Death Risk 90 Times” in *The Pulp and Paper Worker*; (6) 1969 article “Industrial Safety Legislation is Now Needed More Than Ever” in *The Boilermakers-Blacksmiths’ Record*; and (7) 1968 article “Job Safety Bills Need Your Help” in *The Carpenter*.

It is also important to note that from 1964 through the 1970s, there was a substantial spread of information about the dangers of asbestos to numerous unions as a result of the dissemination efforts of Dr. Selikoff. At least 33 unions, including painters and construction workers, were closely associated with Selikoff’s research program, and Dr. Selikoff regularly spoke at union conferences and meetings.

E. Asbestos and the Occupational Safety and Health Act

With the active involvement of organized labor and public health officials, the Occupational Safety and Health Act was enacted in 1970, creating the OSHA agency. Concern that state government regulation of occupational asbestos exposure was inadequate was one of the driving forces behind the creation of OSHA, and asbestos featured prominently in Congressional testimony regarding the OSHA bill. For example, in his testimony before Congress, the Surgeon General cited asbestos-related diseases as a major example of the need for federal occupational exposure standards. Dr. Selikoff also testified before Congress and gave detailed information about the health hazards of asbestos and the studies he had conducted at Mt. Sinai on lung cancer and mesothelioma

among asbestos workers. In addition, George Meany, the President of AFL-CIO, testified and stated that he himself had been aware of the hazards of asbestos since 1936.

After OSHA was created, its very first rule-making effort involved asbestos, further illustrating the prominence of health concerns about occupational exposure to asbestos.

F. Awareness of Asbestos Hazards Among the General Public

1. Print Media

Information about the hazards of asbestos, including the risk of lung cancer, began appearing in general interest publications as early as 1948. In that year, *Businessweek*, a popular business magazine, published an article entitled “Industry Against Cancer.”¹⁶ The article listed asbestos as a suspected cause of cancer. The following year, in 1949, *Scientific American*, a popular science magazine, published an article that listed asbestos as a known carcinogen.¹⁷ In 1950, *Newsweek*, a popular general interest magazine, referred to asbestos as a probable cause of lung cancer.¹⁸ The entry for “Cancer” in the 1952 version of the *Encyclopedia Britannica* stated that cancer occurred in workers exposed to asbestos dust.

On January 10, 1954, the *New York Times*, perhaps the world’s most prominent newspaper, published an article entitled “Science in Review.”¹⁹ The article listed asbestos as a cause of cancer in humans. In 1964, the *New York Times* published an article entitled “Rare Carcinoma Believed on Rise,” reporting on Dr. Selikoff’s research on mesothelioma and asbestos.²⁰ In December 1964, *Scientific American* published an article entitled “Dangerous Dust?”²¹ The article discussed Dr. Selikoff’s work at Mt. Sinai and the risks of cancer from asbestos exposure. The article also discussed balancing the risks of asbestos against its usefulness.

¹⁶ “Industry Against Cancer,” *Business Week*, 13 November 1948, 39–40, 42.

¹⁷ Groff Conklin, “Cancer and Environment,” *Scientific American*, January 1949, 11–15.

¹⁸ “Small Studies,” *Newsweek*, 15 May 1950, 53.

¹⁹ Robert L. Plumb, “Science in Review: Tobacco Industry Acts to Determine Whether Cigarettes and Lung Cancer are Related,” *New York Times*, 10 January, 1954.

²⁰ Harold M. Schmeck Jr., “Rare Cancer Believed on Rise,” *New York Times*, 7 October 1964, 24.

²¹ “Dangerous Dust,” *Scientific American*, December 1964.

The *Wall Street Journal*, on November 11, 1968, published a front-page article entitled “Medical Researchers Study Role of Asbestos As Cause of Ailments.”²² The article mentioned lung cancer and mesothelioma. In February 1969, *Reader’s Digest*, one of the most widely read general interest magazines in the country, published “More Bad News for Smokers.”²³ The article discussed respiratory diseases and death among asbestos workers. It also discussed lung cancer in asbestos workers who smoked. *Time*, one of the most popular general news magazines, published articles in 1969 and 1970 discussing lung cancer as a risk of asbestos exposure.²⁴

On May 4, 1971, the *New York Times* published “Coats with Asbestos in Fabrics Termed Hazardous.”²⁵ The article represents an instance of reporting on non-occupational exposure to asbestos. The article stated that workers and consumers might be in danger of lung disease from asbestos in coat fabrics. It also mentioned Dr. Selikoff’s having addressed the clothing worker’s union on the hazards of asbestos. On July 18, 1971, the *New York Times* published an article entitled “You’ll Be All Right If You Just Stop Breathing.”²⁶ The article discussed the “deadly side” of asbestos-related lung cancer.

The *Wall Street Journal* published “Job-Safety Unit Sets Tough Rules for ’76 on Plants’ Asbestos” on June 7, 1972.²⁷ The article reported on the new asbestos final standard set by OSHA. It also discussed the fact that asbestos inhalation had been linked to lung cancer.

2. Television and other Visual Media

In August 1966, the American Cancer Society produced a film called “Investment in Life,” starring actor Gregory Peck. The film introduced Dr. Selikoff and specifically discussed asbestos hazards and research. The film was part of a massive educational

²² Ronald Kessler, “Medical Researchers Study Role of Asbestos As Cause of Ailments,” *Wall Street Journal*, 7 November 1968, 1, 19.

²³ Gerhard Angermann, “More Bad News for Smokers,” *Reader’s Digest*, February 1969, 93–94.

²⁴ See “Industrial Safety: The Toll of Neglect,” *Time*, 7 February 1969, and “Environment: The People’s Protector,” *Time*, 16 March 1970.

²⁵ Herbert Koshetz, “Coats with Asbestos in Fabrics Termed Hazardous,” *New York Times*, 4 May 1971.

²⁶ Earl Ubell, “You’ll Be All Right If You Just Stop Breathing,” *New York Times*, 18 July 1971.

²⁷ “Job-Safety Unit Sets Tough Rules for ’76 on Plants’ Asbestos,” *Wall Street Journal*, 7 June 1972.

campaign undertaken by the American Cancer Society to educate physicians and the general public on the hazards of asbestos. The film was widely viewed in many areas of the country. In Texas, for example, an estimated 300,000 Houston residents saw it.

The first national news report mentioning the hazards of asbestos was shown on CBS in 1966. Such reports became much more common in the 1970s. In 1973, for example, ABC Evening News reported on concerns about asbestos in Lake Superior. In 1976, Irving Selikoff was interviewed about asbestos on NBC's *Today* show. In 1978, CBS News reported on the department of Health, Education, and Welfare's asbestos information campaign.

APPENDIX A

THEODORE R. MARMOR

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EDUCATION:

Harvard University, PhD, 1966 (Politics and History)
Wadham College, Oxford, Graduate Research Fellow (Philosophy and Politics), 1961-62
Harvard College, BA, American History and Literature, 1960

EMPLOYMENT HISTORY:

1983-Present	Professor of Public Policy, School of Management, Professor, Department of Political Science, Yale University
1999-Present	Adjunct Professor of Law, Yale University
1993-Present	Director of the Robert Wood Johnson Foundation's post-doctoral program in Health Policy, Institution for Social and Policy Studies, Yale University
1979-83	Chairman, Center for Health Studies, Institution for Social and Policy Studies, and Professor of Public Health and Political Science, Yale University
1976-79	Associate Professor, Committee on Public Policy Studies, University of Chicago
1974-79	Research Fellow, Center for Health Administration, University of Chicago
1973-79	Associate Professor, School of Social Service Administration, University of Chicago
1970-73	Associate Professor of Political Science and Public Policy, University of Minnesota and Associate Dean, School of Public Affairs, 1970-72
1967-70	Assistant and Associate Professor of Political Science, Member, Institute for Research on Poverty, University of Wisconsin
1966-67	Post-doctoral Fellow, University of Essex and Nuffield College, Oxford
1965-66	Instructor, Social Studies, Harvard University
1962-65	Teaching Fellow, Department of Government, Harvard University

OTHER PROFESSIONAL APPOINTMENTS

Centennial Visiting Professor, London School of Economics, Spring term 2001-2003
Rock Carling Fellow, Nuffield Trust, England, 2001
Robert Wood Johnson Investigator Award in Health Policy Research, 2001
Visiting Fellow, Australian National University, 1999.
Visiting Fellow, All Souls College, Oxford, England, 1998
Fellow, Netherlands Institute for Advanced Study, (NIAS), 1997-98
Visiting Professor, Kennedy School of Government, Harvard University, 1996; Spring, 2001
Visiting John J. Hill Professor at the University of Minnesota, 1996
Fellow, Institute of Medicine, National Academy of Sciences, 1993-
Member of the Board, National Academy of Social Insurance, 1987-95
Fellow, Canadian Institute for Advanced Research, 1987-1995
Visiting Fellow, Russell Sage Foundation, 1987-88
Flinn Foundation Distinguished Scholar in Health Care Management and Policy, Arizona State University, and University of Arizona, 1986
“Rethinking National Health Insurance,” selected as best health article by Policy Studies Annual, 1977
Research Fellow, Kennedy School of Government Institute of Politics, 1970
Research Fellow, Adlai Stevenson Institute, 1969

Kennedy School of Government Post-doctoral Fellowship (University of Essex and Nuffield College, Oxford) 1966-67
Finalist, Allan Nevins Prize of the Society of American Historians, for PhD Thesis on "The Career of John Calhoun," 1966
Harvard Graduate School Fellowship, 1962-1965
Rotary International Fellowship, 1961-1962
Wadham College Essay Prize, 1962
Woodrow Wilson Fellowship, 1961-1962
History and Literature Prize, 1959
John Harvard Prize, 1957, 1959
Lockheed Leadership Scholarship, 1956-1960

SIGNIFICANT GRANTS:

Principal Investigator, "Political Analysis: Applications to Health Care and Health Policy," funded by the Robert Wood Johnson Foundation, 2001-2003
Director, Robert Wood Johnson Foundation Post-doctoral Program (Medical Care and Social Science), 1992-Present
Principal Investigator, "Economic Issues and Aging in Canada and the United States: Problems of Income Security," funded by the Donner Foundation, 1989-1991
Co-director, "Reconsidering the Institutions of Social Security," funded by the project on the Federal Social Role Ford Foundation, 1984-1986
Principal Investigator, "New Perspectives in Health," funded by the Kaiser Family Foundation, 1979-1984
Director, Research Project on National Health Insurance, funded by the Robert Wood Johnson Foundation, 1976-1978

EDITORIAL RESPONSIBILITIES:

Advisory Board, Canadian-American Public Policy (CAPP), 2002-
Editorial Board, Journal of Comparative Policy Analysis, 2002-
Editorial Advisory Board, Journal of Health Services Research and Policy, 1996-
Editorial Board, International Journal of Health Planning and Management, 1997-
Editorial Board, Health Policy/ Ethics/ Health Services Research, 1979-1989
Editor, Journal of Health Politics, Policy and Law, 1980-1984; Board Member, 1984-

ADVISORY POSITIONS:

Member, Advisory Board, Canadian-American Public Policy (CAPP), 2002-
Member, Advisory Board, Yale Medical School, RWJ Clinical Scholars Program, 2000-
Member, Advisory Board, American Ditchley Foundation, 2000-
Member, American Board of Ophthalmology, 2000-
Member, Advisory Board, Health Innovation Fund, Toronto, Ontario, Canada, 2000-
Member, Selection Committee, "Society, Culture & the Health of Canadians," for Social Sciences and Humanities Research Council, Ottawa, Canada, 1999
Member, Adjudication Committee, "The Project on Trends," of Social Sciences and Humanities Council of Canada, 1998
Member, Board, 2030 Center: Social Security Project Advisory Board, 1998
Member, National Health Research Institute, Center for Health Economics Research, Government of Taiwan, 1997-
Member, International Advisory Board of The London School of Economics and Political Science, (Health), 1996-
Member, Committee to Visit the John F. Kennedy School of Government, 1996-2002
Member, Board of Directors, National Academy for Social Insurance, 1986-1995

Member, Advisory Board, Center for National Policy, 1986-1992
Member, Board of Directors, Center for Study of Drug Development, Tufts University, 1986-99
Senior Advisor on Health and Social Security, Mondale/Ferraro Campaign, 1983-1984
Member, President Carter's Commission on a National Agenda for the Eighties, 1980-1981
Member, Committee on Consumer Representation in Health Planning, Institute of Medicine, National Academy of Science, 1979-1980
Member, Advisory Board, Journal of Health Politics, Policy and Law, 1976-
Member, Community Action Program Commission, Madison, Wisconsin, 1968-1969
Special Assistant to Wilbur Cohen, Undersecretary of HEW, Summer 1966

CONSULTANCIES:

Expert Witness for Attorney General, Government of Canada, 1999
Expert Witness - Kirkland & Ellis, Jones, Day, Reavis & Pogue, 1998 - 2000
Expert Witness for Attorney General, Province of New Brunswick, Canada, 2000
Expert Witness and Consultant for AARP, 1995-1997
Expert Witness for Attorney General, State of Connecticut, 1994-1995
Consultant, Peat Marwick, 1994-1995
Consultant to the States of Kentucky, Vermont and Delaware on Health Care Reform, 1993
Witness and Consultant on Medicare, Congressional Committee on Ways and Means, 1993, 1992, 1991, 1986, 1984
Consultant to the State of Texas Health Policy Task Force, 1992
Consultant, Select Panel for the Promotion of Child Health, Department of Health and Human Services, 1980
Consultant to the Director, Health Staff Seminar, Washington, DC, 1974
Consultant to National Institute for Mental Health, 1974
Consultant to Urban Institute, Washington, DC, 1974, 1969-70
Consultant to Rand Corporation project on National Health Insurance, 1973
Chairman, Citizen's Advisory Health Group, Metropolitan Council, Minnesota, 1972-1973
Consultant to Ford Foundation for evaluation of grant proposals, 1972
Consultant to Illinois Center for Social Policy on Welfare, 1971
Consultant to the Executive Director, President's Commission on Income Maintenance, 1968-1970
Consultant, Office of Equal Opportunity, 1968

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