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THE REDISCOVERED PROPHET: FREDERICK L. HOFFMAN (1865-1946)

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Prescient and prolific in his writings, F. L. Hoffman is finding new
audiences 50 years after his death

In his day, Frederick L. Hoffman enjoyed an international reputation as a leading authority on public health issues. But, like countless other notables whose fame seems unchallengeable while they are living, Hoffman was abruptly forgotten after his death in 1946. In recent decades, however, his achievements have resurfaced, as investigators have begun to take notice of Hoffman's uncanny ability to identify emerging health problems before anyone else.

For example, in 1985, Paul Brodeur, in a series of *New Yorker* articles on the asbestos industry, called attention to Hoffman's early recognition that pulmonary disease is often associated with asbestos workers. This analysis appeared in 1918, in *Mortality from Respiratory Diseases in Dusty Trades (Inorganic Dusts)*, one of Hoffman's many studies published by the United States Bureau of Labor.

In another relatively recent study, David Rosner and Gerald Markowitz, authors of *Deadly Dust* (1991), discuss Hoffman's influential research on the "dusty trades," and especially his brilliant analytical survey in *The Problem of Dust Phthisis in the Granite-Stone Industry*, under the imprint of the US Department of Labor, Bureau of Labor Statistics, in 1922.

Hoffman also showed remarkable prescience in predicting that changes in smoking habits would have an important effect on public health. In his massive study, *The Mortality from Cancer throughout the World* (1915), he observed that cancer of the mouth occurred almost exclusively in men, and he theorized that tobacco use was an important contributing cause. At that time, few women used tobacco. It was only in the 1920s that women generally began to smoke, in part as a gesture of emancipation and equality with men. Later, Hoffman published an article on the subject in the *Annals of Surgery* (93: 50-67): "Cancer and Smoking Habits." To those who regard the link between smoking and cancer as a breakthrough discovery of the 1950s and 1960s (the report of the Surgeon General's Advisory Committee on Health appeared in 1964), the opening lines of Hoffman's article may seem surprising, since they appeared in 1931:

Possibly no phase of the highly complex cancer problem offers better opportunity for practical results than the general admitted correlation of excessive smoking habits to cancer of the buccal cavity, pharynx, larynx and oesophagus. Medical literature makes record of some outstanding illustrations from Emperor Frederick II of Germany to General Grant, who are known to have died of cancer of the throat attributed to excessive habits of smoking. Yet the question in general has not by any means been so fully elucidated by means of ascertainable and conclusive data as the urgency of the subject would suggest. In fact, I know of no really comprehensive statement of the whole question presenting modern facts suggested by the profound changes in smoking habits, including the wide extension of the practice of cigarette smoking to a considerable

proportion of women.

Hoffman himself was a chain smoker, almost never without a cigarette. Nevertheless, he probably would not have regarded his smoking as "excessive," and he never suffered from cancer.

BATTLING MOSQUITOES AND OTHER PROBLEMS

Another issue addressed by Hoffman is the threat of mosquito-borne disease, which is re-emerging. Hoffman had traveled widely in the American South and in Latin America, and had been impressed by the discoveries of Sir Ronald Ross, who won a Nobel Prize in 1902 for his analysis of malaria transmission. Hoffman had also been impressed by the achievements of William Crawford Gorgas, whose sanitary measures to control both yellow fever and malaria in the areas around the Panama Canal were critical to the successful completion of the Canal project in 1914.

During World War I, Hoffman began to publish a series of studies on malaria, and he was active in the New Jersey Mosquito Extermination Association, established to implement mosquito control programs and increase public awareness of preventive measures. Such programs were so effective that malaria came to be thought of as an exotic tropical disease. People generally forgot that malaria had occurred regularly in the early 1900s in the United States, not only in the South, but also as far north as Massachusetts. Eventually, the managers of the New Jersey mosquito commission (now an office of the New Jersey Department of Environmental Protection) found it difficult to obtain funding for their projects. Since malaria cases had become so infrequent, it seemed that mosquito control was no longer necessary. Such may be the rewards for success. But, as Hoffman long ago pointed out, and as recent outbreaks of malaria, dengue fever, and even West Nile virus (an urgent health concern in New York these past two summers) have made clear, constant vigilance is necessary to prevent recurrences of mosquito-borne diseases.

Hoffman also tackled the thorny issues of national health and pension insurance, two issues that have a special relevance to the present. In his extensive writings, especially in 1919 and thereafter, he adamantly opposed such plans. His main contention was that they were fiscally unsound. He also believed that they were socially unwise. In his judgement, it was better for individuals and for society as a whole if people relied on their own private initiative and resources, rather than on governmental programs of assistance. Interestingly, his warnings have taken on new urgency in light of questions about the long-term solvency of the American Social Security system. And national health care remains a controversial issue in the United States and other countries. Even in Europe, where national health and social assistance programs have traditionally been supported almost without question, economic analysts are advocating that such programs should operate as one dimension of a three-part approach, including contributions from organizations in the private sector, and from investments by individuals on their own behalf.

On many other subjects, Hoffman made accurate predictions. For example, in his series of articles on American air travel (in the *New York Times*, June 10- August 26, 1928), he foretold that long-distance air travel was destined to supersede passenger travel by rail. Another of his aviation predictions was that the development of airplanes for military use would entail a significantly greater number of civilian casualties in future wars. His point was amply borne out in World War II, with the devastating bombing of cities in England, Germany, and Japan.



Frederick L. Hoffman in an undated photograph.

Photo courtesy of Hoffman family archives.

THE BUSY MAN BEHIND THE BUSY TYPEWRITER

Who then, was Frederick L. Hoffman? And how did he arrive at his prescient analyses?

For most of his life, Hoffman was a professional statistician, employed by the Prudential Insurance Company in Newark, New Jersey. His international reputation was fostered by representing the Prudential at important professional meetings, such as the triennial International Congress of Actuaries. He also published widely. The bibliography of his books and articles runs to about 1,300 items, including 28 major works of 100 or more pages. And he wrote a huge amount of unpublished material, including his reports to the president of the Prudential, and a large quantity of business and family correspondence. Hoffman also was a founder and board member of many prominent public health organizations, such as the American Tuberculosis Association, and the American Cancer Society.

From Hoffman's beginnings, one might never have predicted such a career for him, except for his intense scientific interests, and his tremendous inner determination and drive to overcome all obstacles. He truly was a "self-made man," who started out with few advantages

and met many challenges.

Frederick Ludwig Hoffman (or Hoffmann, as the name was spelled originally) was born in the duchy of Oldenburg, in northwestern Germany, on May 2, 1865. His father, Augustus Franciskus Hoffmann (1832- 1876), an accountant, instilled in his son a love of learning and of scientific investigation. However, when Hoffman was ten years old, his father died of consumption, which was later to become a lifelong professional interest for the younger Hoffman. The family had few financial resources to fall back upon, although Hoffman's mother went to work, and was proud of being among the first in her region to use a typewriter.

Hoffman was able to continue his schooling for a few years, but his hopes of entering a university were ruined when he was told by his family that he had to quit school and go to work as an apprentice in some kind of mercantile business. He tried various jobs as a shop-boy, doing menial tasks for shopkeepers in small stores, but he hated the work. For one reason or another he was repeatedly fired, much to the disgust of his family, who regarded him as a lazy dreamer and a "stuck-up good-for-nothing" (comparable language appears in surviving German letters written by his mother). Hoffman, in his German diary, gives vivid details of his painful experiences. He was slightly built, weighing little over a hundred pounds, and found it hard to do the lifting, carrying, and other physical tasks that were demanded of him. He was also susceptible to cold (he hated having to shovel snow), and longed to be in a warmer climate.

Meanwhile, Hoffman thought that his only hope for fulfilling his ambitions was to leave Germany somehow. His youthful reading had fired his imagination with visions of adventure in exotic places such as Africa, South America, the South Pacific, and the American West. He sent numerous inquiries

to organizations that were establishing posts in new, far-flung German colonies, such as South West Africa (now Namibia), and German New Guinea (now part of Papua New Guinea). But Hoffman's inquiries came to nothing. The competition for such assignments was intense, and Hoffman lacked money, connections, and credentials. He seemed to be an absolute nobody, a condition that he was determined to overcome.

Finally, after he had been fired from yet another menial position after only one day on the job (as a polisher of table silver in a resort hotel), he was living in the streets and nearly starving because he was too ashamed to go home again in disgrace. But he was rescued by a relative, and was lent enough money for the passage to New York, where he arrived on November 28, 1884, with the equivalent of about five dollars in his pocket. He also had a letter of introduction to a German shop-keeper in Manhattan, and the address of a German who had a store in Cleveland.

Hoffman stayed in New York for only a few days before going to Cleveland, where he was offered a job as a helper in a small general store in an immigrant neighborhood. Again, he found himself doing the kind of work that he had disliked in Germany, but he was filled with hope and with determination to make use of the seemingly limitless opportunities that now lay open to him. As soon as he had saved a little money, he set off to wander through the South, picking up work where he could find it, staying while jobs lasted, and moving on when they ended, or when he began to feel restless again. Even though Hoffman was living more or less like a hobo, his imagination was thrilled by the new sights and experiences as he sailed down the Mississippi. He saw mountains for the first time when he passed through the Appalachians. During this period, he also was learning English and reading widely in many fields, pursuing a course of self-education that he soon put to use in his first publications.

THE WANDERER SETTLES DOWN...

In 1887, Hoffman became a shipping clerk for the Standard Oil Company office in Brunswick, Georgia, and there he met his wife-to-be Ella George Hay, whom he married in 1891 after a long courtship, mostly carried on through correspondence. They had seven children (of whom one died in infancy). In 1892 Hoffman became an American citizen.

Hoffman first became interested in the insurance business in 1888. On a coastal steamer, he had worked his way from Georgia to Boston to see a friend named Henry Carruthers, whom he had met on a Mississippi riverboat. With the help of a timely loan of a few dollars to tide him over, he found a sales job in a store, and one day, quite inadvertently, he happened to make an inquiry at the Waltham office of the Metropolitan Insurance Company. The firm was always in need of industrial insurance agents: men who would go into working-class neighborhoods to collect small weekly premium payments—pennies and nickels—from families for insurance policies that would pay a modest amount to cover burial costs. Hoffman was hired, and thus he began to work in the field in which he would make his career.

In 1890, Hoffman and Carruthers moved from Boston to Chattanooga, where they opened their own brokerage business. But in the depressed conditions prevailing in the post-Civil War South, the venture was not successful. The cash flow was too slow to generate enough commissions for them to get by on, and they did not have enough capital to enable them to wait out the slow periods. When the partnership broke up, Hoffman went to work for the Life Insurance Company of Virginia, in its Norfolk office.

During this time, Hoffman had made the acquaintance of Frances Morgan Armstrong, who was helping to manage Hampton Institute, founded by her husband, in 1868. Hoffman became especially interested in the social position of African-Americans. One of his first statistical studies was his article "Vital Statistics of the Negro," published in a Boston journal, *The Arena*, in 1892. This work attracted the attention of the Prudential Life Insurance Company, which in 1894 offered him a job in their statistical department in Newark. He was to remain with the Prudential for nearly 40 years.

Hoffman's first book was *The Race Traits and Tendencies of the American Negro* (1896), published in the United States by the American Economic Association, and in England by Swann Sonnenschein. His impulses in investigating this topic were primarily humanitarian, for he saw then that the problem of race was one of the most urgent issues in American society. But his views were heavily influenced by the prevailing racism and Darwinism of the time. His research was based on the inadequate returns of the 1890 census, in which African-Americans were undercounted. Hoffman's statistical evidence suggested that the Negro was susceptible to many illnesses and constitutionally unfit for survival, and was destined to die out. This analysis was accepted by some, but challenged by others, including Kelly Miller, an African-American scholar who wrote a lengthy review as the first of the series of "Occasional Papers" of the American Negro Academy in Washington, DC (1897). Miller pointed out the shortcomings of the 1890 census, and argued that Hoffman had not given enough weight to environmental conditions as an influence on Negro health and mortality.

Another factor in Hoffman's approach was the insurance companies' practice of charging higher insurance premiums to blacks. This practice was in violation of anti-discrimination legislation in effect at the time. Hoffman's study was intended, at least in part, to justify the practice of the insurance companies.

As his career developed, Hoffman turned to the investigation of industrial accidents and occupational diseases, which, with the passage of workmen's compensation legislation, were important to the insurance business. Hoffman explored safety and environmental conditions in many industries, and also began to take an interest in various minority groups, especially Native Americans. He began to campaign for better health care for Indians and, on the basis of his statistical studies, he urged the Prudential to accept them as insurable. It is possible that these investigations of Hoffman's contributed to the eventual reversal of his position about African-Americans. As reported in the *New York Times* of February 6, 1926, he stated, in a speech before the National Urban League, that unfavorable influences on Negro health were "environmental rather than racial."

An issue prominently studied by Hoffman in the early years of his career was the prevalence of dangerous conditions among workers in the "dusty trades," as industries were called in which manufacturing processes generated high levels of dust. His investigations in this field helped bring about legislation to control sanitary conditions in the workplace. At this time, Hoffman also was active in the American Tuberculosis Association. And, in 1911, he was awarded an honorary doctorate (LL.D.) by Tulane University, thus giving him the academic credentials that he had been denied access to in Germany during his early years. Thereafter, he was generally known as "Dr. Hoffman."

One of Hoffman's most influential works was "The Menace of Cancer," an address before the American Gynecological Society in 1913. This was a call to arms, intended to bring cancer out of hiding as a shameful condition that could not be discussed publicly, and to make it a high priority for research and public health awareness. Hoffman's statistical analyses of mortality had shown that

cancer was dramatically on the rise, and his address led directly, within weeks, to the formation of the American Cancer Society. Cancer was the subject of several of his most ambitious works, including the nine-volume *San Francisco Cancer Survey* (1924-1934). He had chosen San Francisco because the city had an exceptionally high cancer rate.

In his last major publication, *Cancer and Diet* (1937), Hoffman argued that the diet of people in "developed" nations contributed to the high incidence of cancer. And he pointed out that, by contrast, in less developed countries where people followed a simpler diet, there was a much lower cancer rate. His views were regarded with some skepticism at the time, but his prescience is being demonstrated by the attention given to dietary considerations in present-day analyses of cancer, as in a recent study by the World Cancer Research Fund and the American Institute for Cancer Research [*Food, Nutrition and the Prevention of Cancer: A Global Perspective* (1997)].

Throughout all of his research, Hoffman worked on the assumption that to obtain accurate results one needed large quantities of exact statistical data, scrupulously gathered, according to uniform standards. He was working at a time when sampling as we know it today was not practiced, simply because there was insufficient data on which to base a representative sample. In the insurance industry, much of the rating was done by mere guesswork. Hoffman saw the need for widespread, uniform record-keeping as a preliminary requirement to the analysis of demographic trends, mortality rates, and public health conditions. Throughout his life, he campaigned for accurate record-keeping in hospitals, and in government offices concerned with vital statistics. During his investigations, he often had to start from scratch, doing his own surveys and fieldwork, designing and administering his own questionnaires, and tabulating the results himself. Eventually, he had a staff of assistants in his statistical laboratory at the Prudential. Nevertheless, when he visited factories, mines, or tropical hospitals, he learned for himself about every detail of the general conditions.

Another part of his method was to read extensively about the past and present of a new locality he was to visit. When he arrived, he would wander at random through the streets, observing people (their clothing, build, general appearance), houses, streets, vegetation, geography, and climate; in short, everything that went into making up the environment. He had an almost obsessive concern for obtaining first-hand, detailed data about all his subjects of inquiry, which is one of the reasons for his success.

...BUT NOT ENTIRELY

The wanderlust never subsided, and Hoffman delighted in his opportunities for travel. During his youth in Germany, he had longed to see the world. In America, he was able to find ways to fulfill that ambition. Hoffman traveled all over North America to investigate conditions in mines, factories, and lumber camps. He also traveled widely in Europe while attending congresses and meeting with government and industry officials to discuss insurance matters. In 1921, he sailed through the Panama Canal to Peru, and then went on an expedition overland across the Andes and into the lowlands of Bolivia and Brazil, returning home to New York via steamer from Manaus. In letters home, Hoffman wrote vivid accounts of visits to remote, little-known regions of the Amazon forest. He described rushing down the rapids of the Madeira River aboard a balsa raft piloted by skilled Indian navigators, while he clung to the boxes that contained his papers and his precious portable typewriter.

The idea of a simple vacation was unknown to Hoffman. He lived for his work, and his idea of

recreation was to take up a fresh subject for investigation. But some of his happiest moments seem to have been spent among the Indians of the Southwestern United States. On one occasion, he was made an honorary Navajo chief. He admired Indian civilizations, and was interested in the value of Indian herbal remedies and medicines, which he investigated among the Quechua Indians of Peru. Hoffman also enjoyed writing poetry (unambitious, and mostly unpublished), and some of his most appealing poems are on Indian themes, such as one that he wrote while on a visit to the source of the Mississippi, near Lake Itasca, Minnesota. He exhorts the reader:

*Scorn not the Midi-wiwin,
The Indian's medical art,
It teaches the path to goodness,
And long life to the pure in heart.*

In 1927, Hoffman made an air trip across Europe. He visited Moscow and Leningrad, about which he wrote favorably in a series of newspaper articles for the *Newark Evening News* and the *Peoria Star*. He was very much a conservative Republican, and emphatically not a Communist, but he admired the Russian work ethic and the sense of optimism that was in the air at the time. He noted that the United States was far behind Europe in developing passenger air travel, which he saw as the trend of the future. He wrote similar travelogues about a trip to Mexico in 1926 (in the *Boston Herald*); and, interestingly, he had complimentary things to say about the populist, anti-clerical Calles regime.

In 1922, in the aftermath of disagreements about the conduct of the Bolivian expedition, Hoffman resigned from his regular job with the Prudential, although he remained on call as a consultant until 1935. He had earlier impressed Roger Babson, whom Hoffman had met in Washington, and Babson invited Hoffman to become dean of the new Advanced Department in Business of the Babson Institute, in Wellesley Hills, Massachusetts. Hoffman filled this post from 1922 to 1925. From 1926 to 1929 he served as a consultant in research there. He later became affiliated with the Franklin Institute in Philadelphia, where he wrote *Cancer and Diet*.

Hoffman spent his final years in San Diego, where he had been advised to move for his health in 1938. Even though he was suffering from Parkinson's disease, he continued to write, and he published a study on lead and lead poisoning in the *Monthly Labor Review* (November 1944). Early in 1946, Hoffman suffered a serious fall, and he died on February 23.

In his last years, Hoffman had enjoyed seeing his achievements honored. In 1943, for example, he was awarded the American Cancer Society's Clement Cleveland medal in recognition of his leadership in cancer research and in promoting cancer awareness. But soon after his death, his name and his reputation sank into oblivion. Hoffman had been a world-famous speaker and author, regularly quoted in newspapers. Almost overnight, he became a forgotten figure. Perhaps, as Andy Warhol was later to remark, fame may last only "fifteen minutes." But, as in Hoffman's case, real achievement lives on, and (whether publicly acknowledged or not) is always alive in its effects and in its capacity for being appreciated by those willing to undertake historical investigations. Recognition of Frederick Ludwig Hoffman's insights and achievements now seems assured.

Additional Resources:

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Francis J. Sypher (CC '86) lives in Manhattan, and is completing a book about Hoffman, including a biography, a survey of his work, and a bibliography of publications by and about F. L. Hoffman.