

# The Illusion of Medical Certainty: Silicosis and the Politics of Industrial Disability, 1930–1960

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IN THE CURRENT DISABILITY LITERATURE IT IS widely assumed that objective standards, however difficult to achieve, are preferable to social or political criteria. The latter are seen as subjective and therefore incompatible with efficient and value-neutral public policy. Our examination of the history of industrial disease and disability policy, however, suggests that there is no neat differentiation between social and medical standards.

In this article we look at the debate over disability policy, focusing on silicosis, the term used to denote a set of breathing difficulties associated with the inhalation of silica dust in a wide variety of industries such as mining, tunnelling, foundries, quarrying, sand-blasting, and other extractive industries. During the 1930s it was considered the “archetypal” industrial health problem. We argue that professional groups, government officials, insurance executives, and labor representatives all contributed to shaping disability policies and even the very definition of this condition. Because silicosis is a condition whose symptoms appear years, usually decades, after exposure it presented a host of problems to those developing disability policy.

During the Great Depression a deluge of lawsuits brought by unemployed workers claiming disability from silicosis forced major industries, insurance companies, government, and labor officials to address the relation between occupational disease and disability. The

central questions debated were: What is an industrial disease? How could health problems related to occupation be distinguished from other, nonindustrial conditions? How should responsibility for risk be assigned? Should a worker be remunerated for physical impairment or loss of wages due to occupational disability through the workers' compensation system? Should industry be held accountable for chronic illnesses whose symptoms appear years and sometimes decades after exposure? At what point in the progress of a disease should compensation be paid? Is diagnosis sufficient for compensation claims or is inability to work the criteria? Who defines inability to work—the employee, the government, the physician, or the company? Overall, labor, management, industry, and insurance representatives argued in accessible to laymen terms over who defined what the medical community would later call "latency," "time of onset," and "disease process." The heated debates of the 1930s became the basis for the revision of state and federal workers' compensation systems for occupational disease.

Because of the silicosis crisis during the Great Depression, representatives of large insurance companies and the foundry and metal mining industries reversed earlier positions and began to press local and federal government officials to integrate silicosis into the existing workers' compensation system. Spokesmen such as F. Robertson Jones and Henry D. Sayer both of the Association of Casualty and Surety Executives worried about the impact of lawsuits on the stability of the insurance industry. Anthony Lanza, the well-known industrial hygienist of the Metropolitan Life Insurance Company, and R.R. Sayers of the United States Public Health Service were prominent public health experts who defined the medical criteria for diagnosis. Robert J. Watt of the Massachusetts Federation of Labor was one of the most active labor representatives involved in the silicosis controversy.

In the post-World War II era, no one from industry, few unions other than the radical International Union of Mine, Mill and Smelter Workers, and fewer industry or government representatives continued to consider silicosis a major health problem. In part, this was due to the financial and political resolution of the crisis of the 1930s with the incorporation of silicosis into many state workers' compensation systems. But other factors were important as well. In the 1960s and 1970s national attention shifted to different industrial lung conditions

as workers organized to demand special protection. Most important, coal miners agitated for special protective legislation against a "black lung," and new political, medical, and labor constituencies brought other lung conditions such as "brown and white lung" to national attention stimulating the medical specialization in the pneumoconioses.

## The Great Depression and the Crisis of Silicosis

The introduction in the early twentieth century of sandblasting, pneumatic tools, and other mechanical devices had dramatically increased workers' exposure to silica dust in a wide variety of industries. Between the First World War and the Crash of 1929 silicosis had devastated particular mining and quarrying communities. But it was not then considered a national problem. By the beginning of the Great Depression, however, a number of factors coincided to create a "silicosis crisis." As many industrial workers were thrown out of work or denied employment because of their physical condition, some workers focused on the role of disease and disability in creating their dependence. Unable to find work, the unemployed sued their former employers and their insurance companies for damages, creating what industry and insurance spokesmen termed a liability "crisis" (Bale 1986). During good times they would have been able to find employment despite varying degrees of discomfort and disability. But, during the Depression, an enormous pool of dependent and disabled workers sought to gain redress from current and former employers through the courts.

By 1936 government officials and business leaders believed that "silica dust is probably the most serious occupational disease hazard in existence today" and that it "typifie[d] the whole occupational disease" problem (U.S. Department of Labor 1940). As a result of the silicosis liability crisis, insurance and business representatives argued that decisions reached by juries and courts were dictated by sympathy or antipathy for the claimant rather than by "objective" science and law. They, along with labor unions and reform politicians, suggested that occupational disease be incorporated into the workers' compensation system because it would provide "reasonable" economic protection for workers while limiting financial liability for insurance companies and industry. By taking decisions regarding culpability

out of the hands of laymen, predictability and expertise could substitute for randomness and subjectivity (Bale 1986).

But there were serious issues that had to be addressed before workers' compensation could be used to address the silicosis crisis. Insurance companies, industry, labor, and government needed to decide on how to integrate industrial chronic disease into a system that had evolved around injuries and accidents on the job. Traditionally, workers' compensation systems paid a dollar amount for the type and severity of any particular injury. Loss of a limb, an eye, or a life were all given a price, and workers or their families could count on receiving a specific amount for a particular injury. These "scheduled" payments might differ in the several states, but the principle of concrete awards for predictable events was the basis of these systems.

Silicosis presented a challenge to the compensation system, for the effect of disease was rarely obvious and clear cut. Unlike accidents and acute poisonings, silicosis was a chronic condition that might or might not show symptoms at any particular time. Medical opinion was divided as to how it progressed, whether disability and impairment were inevitable, and the length of time between exposure and first symptoms. In light of enormous medical uncertainty regarding the nature of silicosis, legislators, insurance company representatives, industry spokesmen, public health officials, and labor were faced by the political problem of defining medical and political criteria for its compensation, the financial implications of which were largely unknown.

The debate of the 1930s centered on two differing conceptions of disability. The first was that compensation should be treated simply as a response to accidental injury. If a worker lost a limb or was disfigured in any way, even if it did not result in any specific loss of income, the injury was compensable. An insult to the worker's body was sufficient cause for payment. In the 1920s, for example, compensation boards commonly held that an employee "may become permanently partially disabled by the loss of some member of his body without suffering a loss in earning capacity" but that the worker was still entitled to compensation for his suffering. Despite the fact that the worker could continue at his job, "the majority of the states have provided in their laws for a schedule of such injuries" (Frinke 1920). But the extraordinary number of lawsuits for silicosis made the possibility of such scheduled uncontested payments extremely

expensive: "We apparently think of every case of pulmonary fibrosis as requiring compensation, whether disabled or able to work," complained Roy Jones (1934) of the United States Public Health Service, and such a policy could bankrupt tottering industries.

By the late 1930s, insurance, business, and public health officials pressed for a second, more restrictive, definition of compensable disease, one that used decreased earning capacity as an objective "criterion" to measure disability (Sander 1936, 261). Insurance, medical, and industry spokesmen called for a narrow definition of compensable disease in which disability was defined in terms of lost income, not impaired function (Kossoris and Freed 1937).

The narrowing of compensation board criteria occurred simultaneously with a more restrictive definition of silicosis itself within the public health community. For example, in 1917 a path-breaking study documented the importance of silicosis in an American mining community by noting that "the first stage [of silicosis] is characterized with slight or moderate dyspnea on exertion." The study maintained that workers at all stages of silicosis, whether early or late, found that their breathing was inhibited. By 1935, however, the Public Health Service no longer mentioned shortness of breath as being a characteristic of the disease in its early stages. Now, the focus of concern was on the relation between silicosis and decreased earning capacity: "The term disability . . . may be defined as a decreased capacity to do the work required of the individual in the course of his usual occupation and/or increased susceptibility to respiratory infection causing a loss of time from work which may reasonably be considered as primarily the result of the pulmonary fibrosis" (Sayers 1935, 71).

The relation of a physical condition to ability to work served to limit further workers' ability to gain compensation, for insurance and public health experts believed that early stage silicosis, uncomplicated by tuberculosis, did not decrease a person's ability to work. For example, one public health expert argued that "simple silicosis . . . causes relatively little severe disability" (Waters 1937, 245) and by 1936 Anthony Lanza (1936, 26) went even further by claiming that "disability in silicosis is seldom due to the silicosis itself." Such medical opinion reinforced the restrictive views of compensation boards. In Wisconsin a court held that the compensation board's refusal to provide money to a diseased worker was appropriate despite

his medical disability. The court ruled that “medical disability, does not, in the absence of an actual wage loss, entitle one to compensation” (*Weekly Underwriter* 1936, 425).

### What Is an Occupational Disease?: The Problem of Tuberculosis

Compensation for silicosis was further restricted by limiting liability in those cases where workers’ disability was complicated by tuberculosis. By the mid-1930s public health officials and statisticians recognized that silicotic workers tended to get tuberculosis at a much higher rate than did the general population. In light of their higher risk of tuberculosis, labor, government, and insurance officials agreed that compensation should be provided for victims of silico-tuberculosis (Waters 1939a, 324). Despite this recognition, however, insurance company representatives and industry spokesmen maintained that the compensation system should not bear the responsibility for tuberculosis, a disease that was not generally understood to be a disease specific to a particular occupation. They rejected the idea that they should pay for “secondary” illnesses. They maintained that tuberculosis was an infectious disease associated with poverty and living conditions rather than with the work place. Since tuberculosis was not an occupational disease and since silicosis itself was rarely severely disabling, it was the worker who should bear the primary burden for the severely disabling condition of silico-tuberculosis. The insurance industry, in particular, held that in cases where tuberculosis was a complicating factor in creating disability “there should be some provision for *reduction* [our emphasis] of compensation benefits” (Caverly 1937, 30).

### Who Should Determine Disability?

The medical profession itself was unable to arrive at a definitive diagnosis of “pure” silicosis even with the x-ray, stress tests, lung function tests, and other technologies (TriState Conference on Silicosis 1940, 20–21). In the years before the integration of silicosis into workers’ compensation, juries were left to judge for themselves the adequacy, the honesty, and the reliability of individual medical ex-

perts. A spokesman for the foundry industry complained that "boards of laymen, after hearing the partisan opinions of physicians selected by the disputants, regardless of the weight of medical opinion" make the decisions in highly technical medical matters. If "difficult diseases such as silicosis [were] brought under the compensation law," he maintained, "the results would be chaotic and probably ruinous." By difficult diseases, this spokesman meant diseases that had ambiguous symptoms, long latencies, poor prognosis, and complex social implications—precisely those diseases that would come to dominate popular and professional attention in the coming decades. Rather than allow overt political interests to define criteria for compensation, he called for the "establishment of competent and impartial medical tribunals, free from political influences, to decide all medical questions involved in controverted cases" (Jones 1934). Some labor and New Deal officials saw this move to give medical professionals control over the definition of disease as nothing more than a political use of "objective science." Despite the rhetoric of objectivity, it was charged that the call for change was designed to disenfranchise labor by stripping away their right to participate in decisions affecting their lives.

As early as 1925 industry, insurance, and medical professionals began to call for the establishment of an official medical advisory panel. They rationalized that such panels were necessary to determine "objectively" the outcome of accident and disease cases brought before the compensation system. Such a process would "reduce the possibilities of political influence to a minimum and would give assurance that only properly qualified men would be considered" (National Industrial Conference Board 1925, 17). In the 1930s such suggestions gained greater urgency given "the desirability of removing this type of case from the sphere of *ex parte* medical testimony" (Lanza 1936, 26–27). The prestigious Committee on Pneumoconioses of the American Public Health Association declared their support for such a scheme in 1933. "Without some form of medical control, the management of compensation for a disease such as silicosis would be difficult." They maintained this position despite the lack of a medical consensus regarding either the mechanism by which silica dust affected lung tissue, the course of silicosis once it was diagnosed, or even the degree of disability associated with the various stages of the disease. The committee acknowledged that silicosis was "a disease in which the definition of disability is obscure." But they went on to urge that

"medical advice is necessary to determine whether the workers' health is impaired to a degree which constitutes disability" (American Public Health Association 1933, 22).

Rather than accept the ambiguity that everyone recognized existed, the Department of Labor called a national conference that served to impose medical control over this highly political issue. In view of the medical uncertainty and political conflicts over the definition of silicosis, "it becomes necessary to search for impartial, objective, quantitative measures by means of which the subjective complaints may be evaluated." In addition to the bacteriological evaluations of sputum and medical evaluations of x rays, the committee advocated the use of "various physiological tests to determine respiratory efficiency." Such tests would include measurements of pulmonary capacity and measurements of pulmonary ventilation during muscular work. It would be the medical board, allegedly removed from the politics of work-place struggle and the real-life pressures of unemployment during the Depression, that would become the arbiters of workers' complaints. There should be established "a medical advisory board of experts on dust disease . . . as an official, impartial body of the State." This body would have absolute authority in all disputed cases involving medical uncertainty. "The findings of this board in cases of medical fact should be final" (U.S. Department of Labor 1938a, 62-63; 1938b, 3). Thus, the appearance of medical and scientific objectivity served to cloak the reality of uncertainty, controversy, and differing political and social perspectives.

The attempt to take the discussion of silicosis out of the public discourse was seen by some as itself a political act. Advocates for labor objected that the use of a medical board to settle claims was arbitrary at best. Martin Durkin, an official from the Illinois Department of Labor who would later serve briefly as Secretary of Labor under Eisenhower, objected to the substitution of the uncertain science of medicine for the judgement of courts and juries of citizens and pointed out that "medicine is not an exact science, and doctors, even experts, have been mistaken." He objected to the idea "that medical boards, composed of experts, should be the final arbiters of disputed medical questions. . . . Such a procedure violates every known idea of American justice and denies a person the right to a trial of the important issue" (U.S. Department of Labor 1938b, 6-7).

Underlying this dissent was the ongoing tensions that existed be-



tween labor officials and medical and public health experts. As we will discuss later in the context of the looming fight over the "Murray bill," a piece of labor legislation promoted by the United States Department of Labor in 1939, the two fields had fundamentally different approaches to the issue of industrial hygiene. Broadly speaking, the state and federal labor administrators generally believed that medical and public health opinion regarding industrial disease was biased in favor of industry rather than the work force, despite its claim of scientific objectivity. New Deal administrators in the United States Department of Labor and some state departments saw themselves as allies of organized labor during the turbulent years of the 1930s and generally adopted labor's distrust of medicine (Rosner and Markowitz 1985, 1987). Throughout the 1920s companies had used physical examinations to discriminate against workers. By taking the silicosis issue out of a political arena in which workers' influence mattered, a coalition of other interests could control the "disease."

### Different Perspectives on Disability

By 1939 the most thoughtful industrial physicians recognized that the differing perspectives undercut not only a clear-cut conception of disability but of occupational disease as well. When A.J. Lanza (1939, 316) was asked how he might try to define occupational disease for the purposes of writing workers' compensation legislation, he admitted that "at one time, I felt that I knew what was an occupational disease, but I no longer feel that way." Ludwig Teleky, an internationally renowned authority on industrial lung diseases, noted in 1941 that the differing perspectives on the relation of industry to disability and disease were embodied in two competing ideas regarding compensation. The first method, "blanket" coverage, was all-inclusive, encompassing all diseases associated with employment. Here, even diseases such as pneumonia, if contracted as a result of work conditions, could be classified as an occupational disease. The second definition was much narrower. It included only those diseases "peculiar to a certain occupation" and these would have to be clearly and definitively enumerated in a schedule in the workers' compensation laws. In this case, pneumonia, a disease that was not specifically associated with a particular industry, would not be compensated, even if conditions

in a particular plant predisposed workers to this illness (Teleky 1941, 357–58).

### *Insurance and Industry Perspectives*

Insurance carriers and industry representatives pushed very hard for ways to limit liability claims and decrease their own costs. They proposed that each state should develop “a schedule of the diseases to be deemed ‘occupational diseases’ ” peculiar to that state in the opinion of medical authorities and that only these “diseases” should be compensated. Such conditions would have to “be traced to origins in ‘trade risks,’—i.e. risks, not of ordinary life, but created by special practices or processes in industrial occupations” (Association of Casualty and Surety Executives 1935). Henry D. Sayer, another representative of the carriers, remarked on the divergence of opinion regarding compensation legislation. “We all start out with the proposition that all diseases fairly chargeable to an industry should be compensated by the industry,” he began. “We differ, however, in the method of coverage, and the difference in method means vast difference in the rule of liability and the burden imposed upon industry,” he explained. Sayer opposed “blanket” coverage; the vague definition of occupational disease led to a situation in which virtually any disease could lead to compensation claims. He wrote that “great danger lies in the fact that such general and vague language will lend itself to the inclusion of any and every sort of illness and disease to which human flesh is heir.” He concluded, ironically, with the derisive comment that such absurd notions could lead to the inclusion of seemingly “natural” diseases such as tuberculosis, pneumonia, and cancer as occupational diseases: “We surely do not think of colds, pneumonia, tuberculosis, . . . and cancer as occupational diseases” (Sayer n.d.).

Sayer believed that blanket coverage would do nothing to resolve the liability crisis. He said that it would provoke a slew of lawsuits, compensation claims along with massive discontent unless the definitions were closely controlled. The all-inclusive method “will give rise and lead certainly to a great volume of litigation, all looking to court interpretations as to what is and what is not an occupational disease” (Sayer n.d.). Others added new dimensions to the arguments in favor of the schedule method.

Sayer saw beyond the immediate crisis over silicosis and sought to protect the insurance industry from assuming the responsibility for broader social and health insurance. He maintained that where industry was directly responsible for a worker's ill health, the industry should pay. But "no such obligation should be placed on industry" for the general ill health of the society (*Weekly Underwriter* 1934, 289-90). Many of the insurance industry feared that a blanket form of coverage would tend to obscure the distinctions between the compensation system and a more general system of relief during the Depression. F. Robertson Jones, General Manager of the Association of Casualty and Surety Executives, summarized the fear and the political goals of the insurance industry which worried that workers' compensation would become a tool of reformers seeking to shift the costs of social welfare benefits for unemployment from the public to the private sector: "The chief trouble today is that we have confused compensation with relief. If we can keep these two ideas separate and can restrict the tendency to turn the compensation system into a universal pension system having no particular relation to employment, we shall have accomplished something" (Jones 1934). Anthony Lanza, who only a few years later would wonder whether there were any "objective" criteria for measuring occupational disease, reinforced this position. In 1936 he pointed out that a major reason for opposing blanket coverage and favoring the schedule method was that it could be framed to include "only true occupational disease." This would make it possible "to estimate with fair accuracy what will be the liability that the employers and the compensation carrier have to face" (Lanza 1936, 26-27).

### *Labor Perspectives*

Organized labor, like the insurance industry, the public health community, and management, held a variety of positions regarding disability caused by silicosis. Spokesmen for the American Federation of Labor developed a rhetoric of dissent and strongly objected to the general position of insurance carriers and industry. They argued that "a disease may grow out of the employment and be caused by it, and yet not be 'characteristic' of it, or 'peculiar' to it." The schedule method of payment limited workers' access under the workers' compensation law and prevented them from gaining restitution for le-

gitimate injuries to their health and well-being. The schedules would "not include any new disease until long after its discovery and after considerable harm has been done to the worker" (Padway 1939, 31). They disagreed that schedules were the only reasonable means of organizing coverage and rejected the idea that compensation should supercede in importance factory inspection and regulation of the work place. Finally, they proposed a system of federal grants in aid that would establish national standards for compensation and federal regulation of occupational disease hazards.

The American Federation of Labor and some of its affiliates disagreed with some of the most elemental assumptions of the insurance and industry representatives. They called for an expanded federal role in work-place regulation that would complement the compensation mechanism, and advocated establishing federal standards for the compensation system itself. Rather than breaking off the issue of compensation from that of work-place regulation, inspection, and control, they called for an integrated approach coordinated by the federal Department of Labor rather than state or federal health authorities (Watt 1938).

### *The Department of Labor and the Development of the Murray Bill*

Both labor and Department of Labor officials believed that the broad problem of chronic, industrial disease and disability would emerge as a critical issue in the following decades. In early 1939 Verne E. Zimmer of the United States Department of Labor drafted a bill for Senator James E. Murray of Montana to address the issues raised by the American Federation of Labor during the silicosis crisis (Zimmer 1939). Although it was strongly supported by Secretary Perkins, there is little indication that it was an administration measure. Based on the belief that industrial disease posed long-term challenges that required federal interventions and that neither federal nor state public health authorities were willing to undertake serious activities, the bill sought to move authority for occupational disease programs into the Department of Labor. In a memo to Secretary and Labor Perkins, Zimmer identified two major purposes in drafting the legislation. First, the bill was aimed at providing financial assistance to the states, through the Secretary of Labor, for control of silicosis in industry.

Also, the bill sought to provide funds to the states' compensation system specifically in order to "give full benefits to claimants for silicosis" (Zimmer 1939). Senate bill 2256 was introduced April 27, 1939. This was the first attempt at establishing federal regulation of safety and health conditions other than the more limited application of the Walsh-Healey Act which gave federal labor officials authority to impose regulations at the work sites of industries doing business with the federal government (Waters 1939b, 34-36).

At the Senate hearing concerning the bill, Dr. Walter N. Polakov, a physician working with the United Mine Workers of America, then part of the new and militant Congress of Industrial Organizations, argued that such federal intervention in work-place regulation was necessary because there was a direct relation between increasing disability and poverty among American workers. Workers who earned \$1,000 or less were more than twice as likely to be disabled than those who earned \$5,000 or more per year. Unlike representatives of management and industry who used the term "disability" to describe the physical impairments of individual workers, Polakov saw disablement from a very different perspective. He pointed out that if disability was defined by one's ability to find work, then all those workers who had been excluded from employment because of a suspicious chest x ray or other medical finding were, technically, disabled. He also sought to broaden the definition of disability to include "any organic or functional disorder the source of which may be traced to harmful working conditions or environment." He argued that simply to make up a list of occupational diseases was inadequate since it would not "include the occupational hazards resulting from the tempo of the work and from the nervous strain of maintaining continuous sustained attention, correct perception, and prompt reaction in the environs of general nervous tension in the work and great responsibility in modern mass production, where a slight mistake in touching the wrong button may kill a number of people to say nothing about damage, of course." The control of these hazards should not be the responsibility of medical and insurance personnel. The latter group especially were untrustworthy because "industrial hygiene and safety are dangerous to insurance companies' profits since as the risk is lessened, so is the volume of business" (U.S. Congress 1940, 65-70).

Despite the support from organized labor, two different versions

of the Murray bill were defeated in the Congress. In the closing months of the New Deal, the attention of the White House turned away from domestic legislation and toward preparation for war. With the Public Health Service opposed to a bill that threatened to strip them of their authority with respect to industrial disease, the White House, never fully behind the bill, provided little political support for legislation. Both bills died in committee.

### Disability, Silicosis, and the Case of New York

Any number of cases could be used to indicate the extremely heated political and economic nature of the debates over silicosis during the 1930s. Martin Cherniak (1987), for example, relates the story of the Gaulley Bridge incident and the congressional hearings that followed the discovery of the bodies of hundreds of workers who had died from silicosis. Elsewhere we related the story of the struggles over silicosis among lead and zinc miners (Markowitz and Rosner 1991). Here, we will trace the struggle over the compensation system. Within each state, governmental, industry, insurance, and labor leaders all played important roles in shaping the compensation laws to include silicosis. But the situation in New York State perhaps best exemplifies the ambiguous roles played by these groups in defining silicosis during the mid-1930s. In this highly industrial state, "coverage" of the disease under a new compensation law first passed in 1934 became so limited that few workers found any redress through the system.

The liability crisis that led to the inclusion of silicosis in the compensation legislation was described by the state's industrial commissioner in early 1936. Elmer Andrews described how "certain industries in this State, particularly in the up-State areas, suddenly developed an intense interest in silicosis" as, in the early 1930s, workers in New York filed many suits under the common law for damages due to silicosis exposure. Despite the fact that since the inception of workers' compensation, industry had opposed any inclusion of silicosis or occupational disease in the legislation, Andrews (1936a) pointed out that "immediately the attitude of twenty years was reversed." Andrews noted that "employers who had opposed inclusion of silicosis under the Workmen's Compensation Law came running to the State pleading for the inclusion of silicosis under the

Workmen's Compensation Act so that they would be protected against the unlimited and terrifying common law damage suits which were being filed against them."

In response to these suits, and to the growing financial crisis, in March of 1934 a bill sponsored primarily by the foundry industry and their insurance representatives was introduced to the New York State legislature to add silicosis to the list of occupational diseases covered under workers' compensation. Although the bill passed, Governor Herbert Lehman vetoed the bill saying that he favored a blanket bill for all occupational diseases (*New York Times* 1934, 1935a). Within six months, at Lehman's initiative, the workers' compensation law was amended to include all occupational diseases, including silicosis. Fearing that its passage would provoke a rash of claims under the workers' compensation laws, the insurance industry demanded that companies institute compulsory physical examinations at the work site to insure that all workers in the foundry industry, in particular, were free from silicosis. The insurance industry feared that workers laid off during the Depression might claim disability for diseases that were not disabling or for diseases that were incurred at other work sites. In light of the ambiguous course of silicosis, the industry sought to protect itself for previously incurred risks. It went so far as to propose that employers be prohibited from participating in workers' compensation after September 1, 1935, the date that the new law took effect, unless all their employees had been screened (*New York Times* 1935b). At the same time, the insurance industry in New York announced that they were raising their rates for workers' compensation insurance in anticipation of increased claims, sometimes by as much as 400 per cent (Andrews 1936a).

Within six months all the major parties in New York State—labor, industry, insurance, and state government—agreed that the new law was not working. The employees were no better off, since the demands of the insurance industry to fire or not hire silicotic workers forced many plants to face "the threat of shut-downs which would put hundreds of skilled workers on the street and add many to the relief rolls." The demand for physical examination of workers was a special hardship. "This resulted in the elimination of many old and experienced workers not solely due to silicosis but for other possible physical defects that could be found" (*New York State Federation of Labor Bulletin* 1936, 3-4). In a less diplomatic moment, Andrews

(1936a) characterized the reaction of the insurance industry more succinctly: "They insisted that the working force be 'dry cleaned.' " In summary, Andrews said, "faced with these rate increases, closed plants, and unemployed workers, matters were in a critical condition" (*New York State Federation of Labor Bulletin* 1936, 3-4). In the short space of six months, the blanket coverage for occupational diseases provided for in the new compensation law had effectively alienated insurance carriers, industry, and labor alike. In addition to the troubled state of the economy during the Depression, no one wanted to further disrupt the state's economy.

In response to this crisis, a new bill was introduced on behalf of the foundry and insurance industries that was even more limited in its scope and which virtually made it impossible for workers to qualify for compensation. The bill provided that there should be no compensation for partial disability and that compensation for total disability should not exceed \$3,000. Further, if disablement or death should occur during the first calendar month during which the act became effective, compensation should not exceed \$500 and would increase only \$50 every month thereafter. Compensation for silicosis was further restricted by a provision that where the last exposure occurred prior to September 1, 1935, no money was to be paid (Andrews 1936b).

The issue of compensation forced labor to choose between their health or their jobs and the New York State Federation of Labor sought to protect jobs (*New York Times* 1936). At the legislative hearing, Industrial Commissioner Elmer Andrews acknowledged that the bill "is not an ideal one." But he defended it as "a compromise solution of an emergency situation and a difficult problem." The purposes of the bill were to keep men at work by keeping compensation rates low and plants open, encourage dust prevention methods, and discourage pre-employment physicals. Both labor and industry appeared in support of the bill, with George Meany, the President of the New York State Federation of Labor, defending the compromise as necessary, if not ideal. At the least, it provided some assurance that workers could continue to work at their trades (*New York State Federation of Labor Bulletin* 1936, 3-4).

Others were not nearly as accepting of the need to compromise with workers' health. Most notably, two of the leaders of labor reform



efforts in the twentieth century, Secretary of Labor Frances Perkins and John B. Andrews, Secretary of the American Association for Labor Legislation, both saw the bill as a dangerous and destructive precedent in labor legislation. In late February 1936, John Andrews wrote to Verne Zimmer, of the United States Department of Labor, enclosing a summary of his objections to the bill and asking Zimmer for his opinion. Shortly thereafter, on March 4, 1936, during the hearings on the bill in Albany, Perkins herself responded to Andrews's letter with a detailed critique of the bill. She believed that the bill was a dramatic step backwards in occupational disease legislation. First, she pointed out, the bill placed a "definite limitation on workmen's compensation benefits payable for total disability and death." Second, she noted that there was a "drastic limitation on medical benefits," and, third, she objected that the bill excluded "any liability whatsoever for partial disability regardless of extent or duration."

It was obviously particularly painful for Perkins, who had been involved in the movement for workers' compensation in New York State and had administered the state's labor department under Governor Roosevelt, to witness the "complete reversal" of the progressive features of New York's law which was previously "among the most beneficial measures of its kind in the country." Not only were the provisions inadequate for claimants, but the bill also provided little or no protection for workers threatened with dismissal. There was no assurance "as to the retention of silicotic workers in industry through the abolition of medical examinations," she complained. In fact, the bill's provision fixing liability on the last employer "seems to invite the continuance of pre-employment examinations as a protection against accrued liability." She was particularly disturbed by the section of the bill that prohibited the use of information on industrial conditions gathered through the offices of the industrial commissioner in compensation claims. This, she noted, completely undermined the chances for a claimant to achieve "a fair and equitable disposition of a pending compensation claim." Her objections to this bill were so strong that she concluded her letter by asking for its complete rejection. "So restricted and meager are the benefits under this proposed amendment that it offers little to workers as a substitute for the common law remedy available previous to enactment of the all-inclusive occupational disease act effective last September." She con-

cluded, "I would prefer to this weak paliative the frank elimination of silicosis from coverage until such time that suitable and acceptable compensation plan can be devised" (Perkins 1936a).

Despite her appeals to the governor and an intensive lobbying campaign by the American Association for Labor Legislation against the bill, it passed and was signed by the governor in June 1936 (American Association for Labor Legislation 1936; Perkins 1936b). The industrial commissioner of New York State summed up the position of state officials by acknowledging the weaknesses in the bill and asserting that the state had no other options without federal legislation. Appealing to the National Conference on Silicosis in mid-April 1936, Elmer Andrews asked for their assistance "in bringing about, in the very near future, some measure of compensation coverage for silicosis in the principal industrial, mining and quarrying states. The almost total lack of such coverage is what has made necessary the appallingly low maximum compensation now proposed in the New York State bill" (Andrews 1936b). In 1940 compensation payments were raised modestly (*New York Times* 1940).

## Disability Policy in the Post-war Years

During the fifteen years following World War II attention to silicosis declined among all the constituencies that had heatedly debated the issue during the Depression. All the participants in the earlier debate agreed to a more restrictive definition of the problem. Labor turned its attention toward wages and fringe benefits while insurance companies and industry, in general, succeeded in limiting their own liability through the development of scheduled workers' compensation payments. In the post-war years the hostility to organized labor among many in Congress, state government, and industry combined with comparatively low unemployment to produce a decrease in disability claims for disease and a more restrictive definition of disability itself. The medical and public health community also showed a dramatic change in the attention it paid to silicosis. A review of articles listed in *Index Medicus* for the quarter century following the political crisis over silicosis in the mid-1930s reveals that the number of articles published on silicosis dropped dramatically (see Table 1). Of the 287 articles on the pneumoconioses listed in the 1935 and 1936 issues of

TABLE 1  
Articles on Silicosis and the Pneumoconioses, 1935-1961

	1935-1936	1940-1941	1946-1950	1950-1951	1955-1956	1960-1961
(A) No. articles on pneumoconiosis	287	232	183	240	352	321*
(B) No. on pneumoconiosis in U.S. journals	105	87	52	47	43	n/a
(C) % of total in U.S. journals (B/A)	36.6	37.5	28.4	19.6	12.2	8.7** (D/A)
(D) No. on silicosis in U.S. journals	95	82	44	34	14	28
(E) % of U.S. articles on silicosis	90.5	94.3	84.6	72.3	67.4	n/a
(F) No. of U.S. articles in state/regional journals	27	11	14	9	4	0

Source: *Index Medicus* (1935-1956 as pneumoconioses; 1960-1961 as silicosis).

\* *Index Medicus* now lists "silicosis" as separate heading.

\*\* Includes just articles on silicosis.

*Index Medicus*, 105, or 36 percent, were published in American medical journals. Over 90 percent of these articles were on silicosis. In 1940 and 1941, the percentages are almost identical. Beginning in 1945 and 1946, however, and continuing for the next 15 years, there is a marked shift in this pattern. Between 1945 and 1961 there is a significant increase in the number of articles about the pneumoconioses world-wide. Articles on silicosis in United States journals, however, declined from 44 in 1945 and 1946 to 28 in 1960 and 1961. As a percentage of the total articles, the entries about silicosis in the United States declined from about 25 percent to less than 10 percent over the same period. Despite an increased concern about silicosis world-wide, attention to the disease in the United States decreased markedly.

The review of *Index Medicus* also illustrates their increasing specialization. During the 1930s and through the mid-1940s the articles published about silicosis appeared in a wide variety of journals, including a substantial proportion in state and regional medical journals. In 1935 and 1936, for example, 25 percent of the articles on silicosis were published in organs of the state, local, or regional medical societies. A comparable percentage appeared in 1945 and 1946. By 1955 and 1956, however, only 10 percent of a much smaller number of articles appeared in such local journals and by 1960 and 1961 *no* articles appeared in the local medical journals. One might conclude that local practitioners who made up the bulk of the readership of local medical society journals were no longer exposed to reports about silicosis in their regions and that the condition had become the preserve of a specialty group. This movement away from the generalist and toward specialization is reflected in the subject matter of the articles as well. During the 1930s, the articles were descriptive and therefore accessible to the generalist. By the 1950s, the articles were more technical, appealing to specialists in the emerging fields of pulmonary and thoracic medicine.

George W. Wright along with Leroy U. Gardner, his colleague at Saranac Laboratories, wrote a number of important articles on silicosis that help explain the medical community's increasingly specialized interest in silicosis. Historically, he wrote, physicians sought to determine if a patient had suffered decreased capacity in their everyday life. Disease and disability were measured based on the patient's earlier abilities and the doctor's responsibility was to restore the patient as far as possible to full health. But the recent experience with silicosis

had changed physicians' traditional responsibilities. The compensation system now defined disability "in terms of lack of ability to earn wages and not in terms of a diminution of capacity to breathe or exercise." Physicians should no longer act "as one usually does in terms of loss of ability." Rather it was their responsibility to evaluate a worker's ability to earn a living. "The [physician's] usual approach to problems of health [should] be changed deemphasizing the question whether or not the man has suffered an injury, and directing attention to determining whether or not the claimant still possesses sufficient physical capacity to earn wages as stipulated under the compensation act."

There were two problems that the medical community had to face, Wright maintained. First, was there an impairment that prevented a person from earning a living? Second, was that impairment caused by work? Wright argued that evaluation of an impairment was an extremely difficult and highly technical issue. In light of the fact that the patient's own subjective evaluation of his condition was unreliable and, they assumed, motivated by "frank malingering," the physician had to rely on his own experience and interpretation of the data. Furthermore, the data were highly suspect. He complained that x rays showing "an anatomic alteration of the lungs or heart is still commonly used as evidence that these organs must of necessity be functioning abnormally . . . and the extent of the anatomic change is frequently considered an index of the degree of functional impairment." But, Wright argued, repeated experiments had shown that there was little correlation between the medical evidence and measurements of the patient's capacity to do work. Thus, only functional impairment could be used in diagnosing silicosis (Wright 1949).

Wright, writing in the late 1940s, argued that the widespread attention to silicosis as an occupational hazard misled local physicians. There was "a grave danger," Wright warned, that these "physicians may be inclined to ascribe all the pulmonary ailments of men who have been exposed to dust or fumes to the inhalation of those foreign substances." In the past these local physicians had too much power in making critical decisions. This was especially unfortunate since these local practitioners knew little or nothing about industrial plants, most never having stepped inside one. It was far better, Wright (1949) argued, to depend upon the testimony of "the experienced plant physician" rather than local community physicians when making

a decision concerning industrial disease. Wright called for more control by industrial physicians who were more likely to read and follow articles about industrial disease in more technical journals and would hence be able to distinguish between diseases of industrial and non-industrial origin. "Several diseases of a nonindustrial origin are especially prone to mimic the symptomatology of industrial pulmonary disease and also to lead to physiologic alterations that cause an incompetency to earn wages." Implicit in Wright's argument was that neither workers, their advocates, nor their community practitioners could adequately understand, much less diagnose, silicosis. Industrial disease had to be defined by the medical specialist.

## Conclusion

Because silicosis is a chronic condition, our case raises even broader questions regarding chronic diseases and disability in general. As we have shown, political, economic, and scientific arguments were intertwined throughout the negotiations over the nature, course, etiology, and remedy for disabilities rooted in industrial society. The long period between exposure to toxic materials and disability, the uncertainty of clinical and roentological diagnosis, the inability to measure the degree of disability, the ambiguity inherent in assigning responsibility, all made the decisions regarding the degree of disability or even its existence part of a continuing negotiation among labor, government, public health, and medical communities. In this case, it was the circumstances of depression, unemployment, changing methods of industrial production, and legal debates over compensation that defined the crisis of silicosis in the 1930s. By the 1960s, new constituencies entered into the discussion of the social construction of chronic and industrial disease. Coal miners pressed for the compensation for those suffering from the symptoms of coal workers' pneumoconiosis as reported by patients and tested by internists; textile workers and their advocates helped define the public response to byssinosis; the legal profession, some physicians, and the asbestos workers union forced the problem and asbestos-related lung cancer, mesothelioma, and asbestosis onto the national agenda.

As this study of silicosis indicates, it is impossible to understand the emergence of industrial and chronic health issues without studying

the specific historical circumstances during which these conditions are framed. Professionals, political interests, and economic constituencies all play important roles in interpreting the events in people's lives that are called industrial disease and disability. These changing interpretations become the basis of claims about etiology, latency, onset, incidence, prevalence, morbidity, and mortality. Policy makers, leaders of interest groups, and most important, workers themselves take considerable risk when they assume that such claims, because they are in our culture associated with science, are, therefore, objective.

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