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Deadly Dust: Occupational Health and Safety as a Driving Force in Workers' Compensation Law and the Development of Tort Doctrine and Practice

George Conk
Fordham University School of Law, gconk@law.fordham.edu

DEADLY DUST: OCCUPATIONAL HEALTH AND SAFETY AS A DRIVING FORCE IN WORKERS' COMPENSATION LAW AND THE DEVELOPMENT OF TORT DOCTRINE AND PRACTICE

COMMENTARY

*George W. Conk**

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* J.D. Rutgers Law School (1974), Senior Fellow, Stein Center for Law & Ethics, Fordham Law School.

I was delighted to receive Professor Jay Feinman's invitation to comment. Not only did I graduate from Rutgers Law School, but a few years ago, the *Fordham Urban Law Journal* published my history of the school, *People's Electric: Engaged Legal Education at Rutgers-Newark in the 1960s and 1970s*, 40 FORDHAM URB. L.J. 503 (2012). This symposium demonstrates that engagement with the lives of citizens remains alive here. And I am delighted to see that Northeastern is a co-sponsor. Northeastern has continued in the 'People's Electric' tradition of service. Richard Daynard of the Public Health Advocacy Institute and Wendy Parmet are two leading writers about public health. And now we have Emily Spieler's carefully researched paper.

And of course, thanks to Bob Rabin, the dean of torts teacher whose casebook I have used since 2002; and my friend Adam Scales for his challenging symposium paper.

I. A GOOD DEAL

The "Grand Bargain," is the exchange of workers' tort remedies against their employers, for an exclusive, assured "strict" but limited . . . liability."[1] As Robert Rabin has explained, workers lost an unreliable common law right to sue employers for negligently caused, accidental injury.[2] In exchange, a statutory remedy assured recoveries for accidental injuries arising from and in the course of employment.[3] Aside from the exclusive remedy against the employer, as Professor Rabin points out, tort has persisted, with its promise of full compensation rather than the limited scheduled benefits of workers' compensation.[4] The third-party action is also complementary because workers' compensation health and wage replacement benefits enable workers to survive and to subsist while third-party actions are pending as Professor Rabin notes—and as my thirty years of practice as a plaintiff's lawyer confirms.[5] The massive, and often protracted, third-party asbestos product-liability litigation is prime evidence of that.[6] In a comprehensive article, overseer of asbestos Multi-District Litigation 875 ("MDL-875") District Judge Eduardo Robreno has set forth the history of that federal consolidation of claims.[7] Employers (or their workers' compensation insurers) hold liens on third-party actions which enable them to recover benefits they have paid.[8] Third-party actions thus offset the costs to employers of the Centers for Disease

1. Emily A. Spieler, *(Re)assessing the Grand Bargain: Compensation for Work Injuries in the United States, 1900–2017*, 69 RUTGERS U. L. REV. 891, 892 (2017).

2. Robert L. Rabin, *Accommodating Tort Law: Alternative Remedies for Workplace Injuries*, 69 RUTGERS U. L. REV. 1119, 1123 (2017).

3. *Id.*

4. *Id.* at 1123–24.

5. *Id.* at 1124.

6. DEBORAH R. HENSLER ET AL., ASBESTOS IN THE COURTS: THE CHALLENGE OF MASS TOXIC TORT LITIGATION 20–21 (1985), https://www.rand.org/content/dam/rand/pubs/reports/2006/R3324.pdf.

7. Eduardo C. Robreno, *The Federal Asbestos Product Liability Multidistrict Litigation (MDL-875): Black Hole or New Paradigm?*, 23 WIDENER L.J. 97, 108–09 (2013).

8. *See, e.g.*, N.J. STAT. ANN. 34:15-40 (West 2007). New Jersey's law is typical; an employer holds a first dollar lien against a third-party recovery, reduced by one third for counsel fees incurred by the plaintiff. *Id.*

Control and Prevention ("CDC")-estimated $25 billion annual cost of work-related vehicular accidents.[9]

But this Article suggests that calling the rise of workers' compensation laws across the country from 1910–1930[10] a Grand Bargain understates the workers' gains. It was not much of a bargain for employers. Rather it was a grand victory for workers and for the public health. It was the first mechanism to provide critical health insurance to nearly every worker, regardless of fault, rank, or wage. In an era in which health, hospital, and disability insurance were either not widely available or unavailable,[11] workers gained guaranteed accidental health and disability insurance coverage for the overwhelming majority of workers injured on the job.[12]

One measure of the strength of the workers' gains is that states did not follow the example of the Federal Employees Liability Act ("FELA").[13] That 1908 law allowed tort actions against negligent employers of railroad workers injured while engaged in interstate commerce.[14] The measure ruled out common law defenses such as contributory negligence and established a comparative fault apportionment regime.[15] Yet only seamen followed the FELA's eased tort-claim path as the Merchant Marine Act of 1920 extended coverage to offshore sailors.[16]

As Emily Spieler recounts, the basic structure of the workers' compensation bargain has been detailed by the premier historian John Witt[17] and in Arthur Larson's authoritative treatise—*Workers' Compensation Law*.[18] In my view, the compromise has been

9. *On-the-Job Vehicle Crashes Cost Employers $25 Billion Annually*, CDC FOUND. (Aug. 24, 2016), http://www.cdcfoundation.org/pr/2016/job-vehicle-crashes-cost-us-employers-25-billion-annually.

10. *See generally* Price V. Fishback & Shawn Everett Kantor, *The Adoption of Workers' Compensation in the United States*, *1900-1930*, 41 J.L. & ECON. 305 (1998).

11. Marc Lichtenstein, *Health Insurance from Invention to Innovation: A History of the Blue Cross and Blue Shield Companies*, BLUE CROSS BLUE SHIELD, http://www.bcbs.com/blog/health-insurance.html#.V_xLstUZbME.blogger (last visited Nov. 10, 2017).

12. 1-1 LARSON'S WORKERS' COMPENSATION LAW § 1.01 (2017).

13. Federal Employees Liability Act, 45 U.S.C. §§ 51–60 (2012).

14. § 51.

15. § 53.

16. Merchant Marine Act of 1920 ch. 250, § 33, 41 Stat. 988, 1007 (codified as amended at 46 U.S.C. § 30104 (2012)).

17. JOHN FABIAN WITT, THE ACCIDENTAL REPUBLIC: CRIPPLED WORKINGMEN, DESTITUTE WIDOWS, AND THE REMAKING OF AMERICAN LAW 128–29 (2004); *see also* Spieler, *supra* note 1.

18. *See generally* LARSON'S WORKERS' COMPENSATION LAW (2017).

undervalued in the discussion today. The doctrines of contributory negligence, the fellow servant rule, and assumption of risk were indeed (in the main) abolished in the 1911–1925 period when most states adopted workers' compensation laws as an exclusive remedy.[19] But the workers got the better end of the bargain because even a tort system without the unholy trinity of defenses was an unreliable road to what ill and injured workers needed most: medical care. The bargain was a larger labor victory than is often recognized.

The FELA abolished the common law defenses (contributory negligence, fellow servant, assumption of risk) and adopted pure comparative fault.[20] But it preserved the need to prove "that employer negligence played any part, even the slightest, in producing the injury or death."[21] Since the tort remedy is a single lump sum payment, medical and wage replacement benefits did not flow as automatically as they do in workers' compensation systems.[22] Such needs were left to the collective bargaining process by the Railway Labor Act of 1926,[23] which preceded the National Labor Relations Act.[24] The workers' compensation laws wisely avoided the FELA model, which, if universally embraced, would, like all tort actions, be inefficient, uncertain, and incomplete.[25]

The structure adopted in the Progressive Era (1910–1925) persists: workers' compensation laws provide universal coverage for all workers in an enterprise who suffer injury or illness "arising out of

19. WITT, *supra* note 17, at 67–72.

20. 45 U.S.C. §§ 53, 54; *see also* Rogers v. Mo. Pac. R.R. Co., 352 U.S. 500, 506–07 (1957).

> Under this statute the test of a jury case is simply whether the proofs justify with reason the conclusion that employer negligence played any part, even the slightest, in producing the injury or death for which damages are sought. It does not matter that, from the evidence, the jury may also with reason, on grounds of probability, attribute the result to other causes, including the employee's contributory negligence. Judicial appraisal of the proofs to determine whether a jury question is presented is narrowly limited to the single inquiry whether, with reason, the conclusion may be drawn that negligence of the employer played any part at all in the injury or death. Judges are to fix their sights primarily to make that appraisal and, if that test is met, are bound to find that a case for the jury is made out whether or not the evidence allows the jury a choice of other probabilities. The statute expressly imposes liability upon the employer to pay damages for injury or death due 'in whole or *in part*' to its negligence.

Id.

21. *Id.* at 508; *see also* 45 U.S.C. § 51.

22. *See* 1-1 LARSON'S WORKERS' COMPENSATION LAW§ 1.01 (2017).

23. ch. 347, 44 Stat. 577 (codified at 45 U.S.C. §§ 151–165 (1935)).

24. ch. 372, 49 Stat. 449 (1935) (codified as amended at 29 U.S.C. §§ 151–169 (2012)).

25. *See* HENSLER ET AL., *supra* note 6, at xxii.

and in the course of" their employment.[26] The coverage includes medical care, wage loss replacement, partial and total disability and death benefits.[27] Workers pay no premiums and there are no co-pays or deductibles.[28] Benefits are not reduced or defeated by a worker's own negligence.[29] When the fact of injury "arising" from the work is apparent—as in a motor vehicle crash or a fall—medical care and temporary disability benefits are generally uncontested and flow quickly to the injured worker.[30] Workers' compensation provides such prompt maintenance and medical benefits. Lump sum cash tort awards do not.

A compensation-claiming worker need prove only the fact of employment and a work connection to the illness or injury.[31] Coverage extends to the great bulk of workers, regardless of rank, gender, race, or union membership. This universality, that a worker injured or sickened on the job is entitled to benefits regardless of fault, is the first such coverage for all benefit adopted in our history. The workers' compensation laws preceded Social Security, which provided old-age benefits, as well as benefits for the blind and for crippled children.[32] Social Security benefits were not extended to disabled workers until 1973.[33]

The movement to workers' compensation was among the first in a series of laws—many at the state level—that accomplished important objectives protecting workers' health and safety. The Progressive Era[34]

26. 1-1 LARSON'S WORKERS' COMPENSATION LAW § 1.01 (2017).

27. *See* SCOTT D. SZYMENDERA, CONG. RESEARCH SERV., R44580, WORKERS' COMPENSATION: OVERVIEW AND ISSUES 11 (2016).

28. *See id.* at 1.

29. *Id.* at 2–3.

30. 1-1 LARSON'S WORKERS' COMPENSATION LAW § 1.03 (2017).

31. SZYMENDERA, *supra* note 27, at 11.

32. *See* Social Security Act, ch. 531, 45 Stat. 620, 620 (1935) (codified as amended at 42 U.S.C. §§ 301–1307 (1940)) ("An act to provide for the general welfare by establishing a system of Federal old-age benefits, and by enabling the several States to make more adequate provision for aged persons, blind persons, dependent and crippled children, maternal and child welfare, public health, and the administration of their unemployment compensation laws; to establish a Social Security Board; to raise revenue; and for other purposes."); Fishback & Kantor, *supra* note 10, at 305–07.

33. John R. Kearney, *Social Security and the "D" in OASDI: The History of a Federal Program Insuring Earners Against Disability*, 66 SOC. SECURITY BULL., no. 3, 2005–2006.

34. Herbert K. Abrams, *A Short History of Occupational Health*, 22 ADVANCES IN MOD. ENVTL. TOXICOLOGY 33 (1994), *reprinted in* 22 J. PUB. HEALTH POL'Y 34, 51–64 (2001), http://courses.washington.edu/envh311/Readings/Reading_09.pdf.

also spawned limits on the hours of labor and child labor laws, like the one famously struck down in *Lochner v. New York*.[35]

In the Depression Era, profound changes in the relations between workers and employers were enacted. Chief among these was the 1935 National Labor Relations Act ("NLRA"),[36] which established to right to "concerted action" and led to collective bargaining agreements strengthening labor unions and launching the era of employer-provided health insurance.[37] In *West Coast Hotel Co. v. Parrish*, the United States Supreme Court abandoned *Lochner* and upheld a Washington law governing hours of work.[38] The Federal Fair Labor Standards Act of 1938 ("FLSA") brought us the eight-hour day and entitlement to overtime pay.[39]

Three decades would pass until a mass movement extended workers' rights via Title VII of the landmark Civil Rights Act of 1964, barring race and gender discrimination.[40] The 1963 March on Washington, famous for Reverend Martin Luther King Jr.'s "I Have a Dream" speech, had as its principal demand: "Jobs and Freedom."[41]

The Federal Coal Mine Safety and Health Act of 1969 created a federal remedy for coal workers' pneumoconiosis, commonly called

35. 198 U.S. 45 (1905) (striking down law forbidding employers to require employees to work over sixty hours in a week).

36. National Labor Relations Act, ch. 372, 49 Stat. 449 (1935) (codified as amended at 29 U.S.C. §§ 151–169 (2012)).

> It is hereby declared to be the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce and to mitigate and eliminate these obstructions when they have occurred by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association, self-organization, and designation of representatives of their own choosing, for the purpose of negotiating the terms and conditions of their employment or other mutual aid or protection.

§ 151.

37. *See* Lauren A. Scofea, *The Development and Growth of Employer-Provided Health Insurance*, MONTHLY LAB. REV., Mar. 1994, at 3, 4–6, http://www.bls.gov/OPUB/MLR/1994/03/art1full.pdf.

38. 300 U.S. 379, 400 (1937) (overruling *Adkins v. Children's Hosp.*, 261 U.S. 525 (1923) (*Lochner*-era opinion)).

39. ch. 676, § 7, 52 Stat. 1063 (codified at 29 U.S.C. § 207(e)(5) (2010)).

40. Pub. L. No. 88-352, Title VII, § 703, 78 Stat. 255 (codified as amended at 42 U.S.C. § 2000e-2 (1991)). Compensatory and punitive damages for intentional violations would later be added. Pub. L. No. 102-166, Title I, § 102, 105 Stat. 1072 (codified as amended at 42 U.S.C. § 1981a (1991)). For a history of the mass movement, see TAYLOR BRANCH, PARTING THE WATERS: AMERICA IN THE KING YEARS 1954–63, 846–87 (1988).

41. *March on Washington for Jobs and Freedom*, MARTIN LUTHER KING, JR. RES. & EDUC. INST., http://kingencyclopedia.stanford.edu/encyclopedia/encyclopedia/enc_march_on_washington_for_jobs_and_freedom (last visited Nov. 10, 2017).

"black lung."[42] The federal government paid claims for benefits filed before December 31, 1973.[43] Claims filed later are paid for by the Black Lung Disability Trust Fund, financed by the Coal Excise Tax.[44]

Industrial accidents and occupational disease epidemics drove the movement to pass a national health and safety law.[45] The labor unions, consumer advocates like Ralph Nader, and asbestos researcher Dr. Irving Selikoff were key allies in the campaign for a federal workplace safety law.[46] But despite President Lyndon B. Johnson's support, no bill was passed during his term, ending in 1968.[47] After a precarious campaign,[48] it was in Nixon's administration that Congress passed the Occupational Safety and Health Act of 1970.[49] The law created the National Institute of Occupational Safety and Health ("NIOSH"), as part of the CDC.[50] The Federal Mine Safety and Health Act of 1977 was another step forward for workplace safety.[51] But not until 1994 did the Occupational Safety and Health Administration ("OSHA") adopt an important measure for the recognition of occupational disease. The Hazard Communication regulation mandated Material Safety Data Sheets so that workers could know the chemical to which they were exposed.[52]

The struggle continues. OSHA is thinly funded, its penalties are weak,[53] and even its regulatory authority is questioned.[54] Employers, of

42. Pub. L. No. 91-173, Title IV, 83 Stat. 792 (codified as amended at 30 U.S.C. §§ 901–945).

43. § 901.

44. 26 U.S.C. § 4121.

45. Judson MacLaury, *The Job Safety Law of 1970: Its Passage Was Perilous*, MONTHLY LAB. REV., Mar. 1981, at 18, 20, https://www.bls.gov/opub/mlr/1981/03/art2full.pdf.

46. *Id.* at 22.

47. *Id.*

48. *Id.*

49. Pub. L. No. 91-596, 84 Stat. 1590 (codified as amended at 29 U.S.C. §§ 651–678 (2012)).

50. § 671 (creating NIOSH); *National Institute for Occupational Safety and Health (NIOSH)*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/niosh/about/default.html (last visited Nov. 10, 2017) ("NIOSH is part of the U.S. Centers for Disease Control and Prevention . . . .").

51. Pub. L. No. 95-164, 91 Stat. 1290 (codified as amended at 30 U.S.C. §§ 801–878).

52. Hazard Communication, 29 CFR 1910.1200(g) (2012) (requiring that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) (formerly MSDSs or Material Safety Data Sheets) for each hazardous chemical to downstream users to communicate information on these hazards).

53. MARTHA MCCLUSKEY ET AL., THE NEXT OSHA: PROGRESSIVE REFORMS TO EMPOWER WORKERS 1, 2, 10 (2012).

54. Cass R. Sunstein, *Is OSHA Unconstitutional?*, 94 VA. L. REV. 1407, 1407 (2008).

course, have long sought to reduce their costs—often to the workers' detriment—and workers have sought to protect and expand their benefits. I will discuss shortly the occupational disease struggles that were fought to expand the scope of protection. But for the moment I note again that the direct third-party tort action has been preserved—as have a narrow category of intentional injury cases.[55] As we will see below, the preservation of the third-party action—particularly for product liability—supplemented workers' compensation benefits and invigorated tort law.

II. THE STRUGGLE FOR RECOGNITION OF OCCUPATIONAL DISEASE

I want to spend some time discussing this because it has received little attention so far and because it is a struggle that was hard fought and ultimately successful in many respects. Perhaps because of my experience as a plaintiffs' lawyer in New Jersey for thirty years, I am less pessimistic than Emily Spieler is about occupational disease claims and more positive about what was accomplished.

The struggle for recognition of occupational disease as a workers' safety and health measure has often been a dramatic one. The Zadroga Act[56] and tort settlements for demolition workers at the site of the World Trade Center disaster[57] demonstrate the importance of both the compensation and tort remedies. The efforts of workers advocates and scientists to gain recognition of occupational diseases has informed and improved workers' compensation law at the state and federal levels. It has driven the expansion of Social Security to include disability benefits, the Black Lung Benefits Act, the Coal Mine Safety and Health Act of 1969, and the 1977 Mine Safety and Health Act. And of course the overarching Occupational Safety and Health Act of 1970 which was driven in significant part by the emergence of the asbestos epidemic in the 1960s.[58] These measures are examples of how

55. Borel v. Fibreboard Paper Prods. Corp., 493 F.2d 1076 (5th Cir. 1973); Laidlow v. Hariton Mach. Co., 790 A.2d 884, 886–87 (N.J. 2002); 1-1 LARSON'S WORKERS' COMPENSATION LAW §1.01 (2017).

56. James Zadroga 9/11 Health & Compensation Act, 42 U.S.C. §§ 300mm–300mm-61 (2012); *see generally* Alvin K. Hellerstein et al., *Managerial Judging: The 9/11 Responders' Tort Litigation*, 98 CORNELL L. REV. 127, 128–30 (2012).

57. Transcript of Proceedings at 54, *In re* World Trade Ctr. Disaster Site Litig., (S.D.N.Y. Mar. 19, 2010) (No. 1:21 MC00100).

58. PAUL BRODEUR, OUTRAGEOUS MISCONDUCT: THE ASBESTOS INDUSTRY ON TRIAL 73–93 (1983).

labor and progressive advocacy has come to benefit workers far beyond that of their own membership.[59]

In 1964 Dr. Irving Selikoff organized the landmark international conference, Biological Effects of Asbestos. Sponsored by the New York Academy of Sciences, physicians and scientists from around the world reported their observations about the health effects of exposure to asbestos.[60] The U.S. Department of Labor's Bureau of Labor Standards reported that coverage of occupational diseases had developed more slowly than accidental injuries.[61] And "coverage of the various dust diseases ha[d] lagged behind that of other occupational diseases."[62] Professor Larson reports that the fear of the scale of silicosis claims had deterred adoption of them as within the scope of coverage.[63] Thus New York, like Ohio and Nevada, retained lists of recognized diseases, rather than general inclusive definitions.[64] At the time of the landmark New York conference, the Bureau of Labor Statistics reported that "by 1920, 45 states and territories had workmen's compensation laws. But only seven of these laws . . . and the Federal Employees' Compensation Act[] had provided compensation for all occupational diseases."[65]

In 1964, due to the widespread industrial use of asbestos, the toll was still mounting and legal obstacles remained even to workers' compensation. The Bureau of Labor Statistics reported that "time limits (regarding) length of exposure, to manifestation of the disease, and to the filing of claims are too short to take into account the slow maturing nature of dust disease."[66] States often limited medical benefits; aggregate indemnity benefits varied by state, and waivers were often permitted.[67]

But as recognition of the asbestos epidemic grew, and the strict product liability movement swept the country in the 1960s,[68] the

59. U.S. DEP'T OF LABOR & BUREAU OF LABOR STANDARDS, *Dust Diseases and Workmen's Compensation*, *in* 132 ANNALS OF THE N.Y. ACAD. OF SCIS., BIOLOGICAL EFFECTS OF ASBESTOS 722, 723 (1965).

60. IRVING J. SELIKOFF, *Opening Remarks*, *in* BIOLOGICAL EFFECTS OF ASBESTOS, *supra* note 59, at 7–8.

61. 4-52 LARSON'S WORKERS' COMPENSATION LAW § 52.02 (2017).

62. U.S. DEP'T OF LABOR & BUREAU OF LABOR STANDARDS, *supra* note 59 at 744.

63. 4-52 LARSON'S WORKERS' COMPENSATION LAW § 52.02 (2017).

64. *Id.*

65. U.S. DEP'T OF LABOR & BUREAU OF LABOR STANDARDS, *supra* note 59. Only thirty states provided coverage for "all dust diseases." *Id.*

66. *Id.*

67. *Id.*

68. George W. Conk, *Punctuated Equilibrium: Why Section 402A Flourished and the* Third Restatement *Languished*, 26 REV. LITIG. 799, 808–09 (2007).

momentum toward consumer and worker protection yielded the landmark Occupational Safety and Health Act of 1970.[69] It established in the Department of Labor a federal workplace safety standard setting authority: OSHA.[70] The Department of Labor's Occupational Safety and Health Administration 1971 Emergency Temporary Standard limiting exposure to asbestos dust signaled the beginning of the end of new exposures to the disease, which had gained belated recognition.[71]

Soon thereafter, the coal miners' pneumoconiosis epidemic gained enough recognition to pass the federal Black Lung Benefits Act of 1973.[72] Administered by the Division of Coal Mine Workers' Compensation, the law provides medical, total disability, and death benefits to those suffering from black-lung disease.[73] Amended by the Mine Safety and Health Act of 1977,[74] federal authority over mine health and safety was strengthened. The measure soon had a favorable impact.[75]

As observed above, workers' compensation laws initially extended only to accidental injury.[76] But a protracted, determined—often trade union led—movement succeeded in gaining recognition of occupational diseases.[77] As Emily Spieler observes, we have not realized the goals of the OSHA mandated 1972 National Commission on State Workmen's Compensation Laws.[78] The report's "essential recommendations" called for no exemptions for small firms or government employees; full coverage for all "work-related diseases"—not just specified diseases; weekly cash benefits for total disability—temporary or permanent—of at least two-thirds of the statewide average weekly wage; and "[f]ull medical and physical rehabilitation

69. Occupational Safety and Health Act of 1970, Pub. L. No. 91-516, 84 Stat. 1590 (codified as amended at 29 U.S.C. §§ 651–678 (2012)).

70. Pub. L. No. 91-596, § 6, 84 Stat. 1593 (1970) (codified as amended at 29 U.S.C. § 655 (2004)); *see also* 29 C.F.R. §§ 1910.132–1910.140 (2017).

71. Occupational Exposure to Asbestos: Regulation History, 59 Fed. Reg. 40964 (Aug. 10, 1994).

72. 30 U.S.C. §§ 901–945 (2012).

73. *Compliance Guide to the Black Lung Benefits Act*, U.S. DEP'T OF LAB. (Jan. 2001), https://www.dol.gov/owcp/dcmwc/regs/compliance/blbenact.htm.

74. Pub. L. No. 95-164, 91 Stat. 1290 (codified as amended at 30 U.S.C. §§ 801–804 (2012)).

75. *See* Michael S. Lewis-Beck & John R. Alford, *Can the Government Regulate Safety? The Coal Mine Example*, 74 AM. POL. SCI. REV. 745, 755 (1980).

76. DAVID ROSNER & GERALD MARKOWITZ, DEADLY DUST: SILICOSIS AND THE POLITICS OF OCCUPATIONAL DISEASE IN TWENTIETH-CENTURY AMERICA 13 (1991).

77. *Id.*; Abrams, *supra* note 34, at 52–54.

78. Spieler, *supra* note 1, at 935. *See* 29 U.S.C. § 656 (2012).

services without statutory limits on dollar amount or length of time."[79] But despite the downward trends outlined by Spieler, and persistent exclusions—such as for "casual labor," domestic, and farm workers—workers' compensation has provided benefits to nearly all workers.[80]

Typically, statutory medical and disability insurance coverage are without worker-paid premiums, co-pays, etc.[81] The public, through Social Security Disability Insurance, absorbs much of the burden of long term disability.[82] But—Texas excepted[83]—mandatory workers' compensation coverage assures that the bulk of work-related injury medical costs, and virtually all short-term total and permanent partial disability coverage, remains with the employing enterprise.

III. SILICOSIS: THE KING OF OCCUPATIONAL DISEASES

The fight for recognition of occupational disease has been a long one. Though every state now has some form of coverage, the road was tortuous.[84] Employers feared liability claims and insurers worried about the incalculable costs of prospective workers' compensation claims.

In order for a disease to be compensable it must be defined and recognized as causally work-related; in typical statutory language, the injury or disease must arise "out of and in the course of" employment."[85] For silicosis the problems of definition and causation were substantial.

At the start, there was an obstacle familiar to anyone who has read Thomas Kuhn's *The Structure of Scientific Revolutions*[86]: the theory that progress is uneven, and is made when one explanatory model—a paradigm—replaces another. A prime example is that of John Snow, the

79. *Notes and Brief Reports: Report of the National Commission on State Workmen's Compensation Laws*, 35 SOC. SECURITY BULL., Oct. 1972, at 31, 31 [hereinafter *Report on State Workmen's Compensation Laws*], https://www.ssa.gov/policy/docs/ssb/v35n10/v35n10p31.pdf.

80. 9-101 LARSON'S WORKERS' COMPENSATION LAW § 101 (2017); Spieler, *supra* note 1, at 990–91.

81. Christopher J. Boggs, *Benefits Provided Under Workers Compensation Laws*, ACAD. J. Blog (Mar. 23, 2015), http://www.insurancejournal.com/blogs/academy-journal/2015/03/23/360655.htm.

82. 42 U.S.C. § 423; 14-157 LARSON'S WORKERS' COMPENSATION LAW § 157.03[5] (2017) (stating that one-half of the states and the District of Columbia reduce workers' compensation benefits when a worker receives SSDI); *Benefits for People with Disabilities*, SOC. SECURITY ADMIN., https://www.ssa.gov/disability (last visited Nov. 10, 2017).

83. *See* Spieler, *supra* note 1, at 931–32 (observing that coverage is mandatory except in Texas).

84. 4-52 LARSON'S WORKERS' COMPENSATION LAW §§ 52.02, 52.07 (2017).

85. *See, e.g.*, CAL. LAB. CODE § 3600 (West 2012).

86. *See* THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (1962).

father of modern epidemiology.[87] As detailed in *The Ghost Map*, Snow proved by careful mapping that the origin of the 1854 cholera outbreak in London was a leaking septic tank's fecal contamination of the Broad Street pump.[88] Snow had demonstrated his theory in a decisive way, but physicians remained attached to their long-standing theory that "miasma"—foul odors—was the source of disease.[89] Snow, a pioneer in the use of ether, rejected the theory—but he lacked proof of the mechanism of disease.[90]

The miasma paradigm would not suffer a fatal blow until 1882 when Robert Koch revolutionized the prevailing views of "consumption" (which today we call tuberculosis).[91] Koch identified the tubercle bacillus, providing a key to understanding the etiology of the disease.[92] The bacteriologist's finding was revolutionary: the source was not in the foul air, but in the transmission via sputum from one person to another.[93]

The fight for occupational safety and health has largely been a product of the means of mass production—the coal mines, steel mills, foundries, textile mills, and all who have used asbestos.[94] But the issue first gained attention when, in the granite quarries of the northeast, stone cutters' work changed from hand drills and sledge hammers to steam-driven equipment.[95] Pneumatic jackhammers were nicknamed widow makers.[96] In 1910, the Barre Vermont Granite Cutters Journal—a union publication—warned of "granite cutters consumption."[97] Yet the immediate killer was not disabling silicosis—serious as that was—but rather tuberculosis—the bacterial lung

87. David Vachon, *Doctor John Snow Blames Water Pollution for Cholera Epidemic*, OLD NEWS (May & June, 2005), http://www.ph.ucla.edu/epi/snow/fatherofepidemiology_part2.html#TWO.

88. STEVEN JOHNSON, THE GHOST MAP: THE STORY OF LONDON'S MOST TERRIFYING EPIDEMIC—AND HOW IT CHANGED SCIENCE, CITIES, AND THE MODERN WORLD 71–74 (2006).

89. *Id.* at 74–75.

90. *Id.* at 144–48.

91. SHEILA M. ROTHMAN, LIVING IN THE SHADOW OF DEATH—TUBERCULOSIS AND THE SOCIAL EXPERIENCE OF ILLNESS IN AMERICAN HISTORY 179–80 (1994).

92. *Id.* at 179.

93. *Id. at* 179–93.

94. Coal miners suffered from pneumoconiosis, textile workers from byssinosis, and steel and foundry workers from chronic bronchitis and asbestosis. *10 Deadliest Occupational Diseases in History*, HUM. RESOURCES MBA (Feb. 20, 2012), http://www.humanresourcesmba.net/10-deadliest-occupational-diseases-in-history.

95. ROSNER & MARKOWITZ, *supra* note 76, at 38.

96. *Id.* at 41.

97. *Id.* at 39.

disease to which silicotic workers were especially vulnerable.[98] While tuberculosis declined for the general population—thanks to the insights of the germ theory—the disease grew among granite cutters from 257.7 per 100,000 workers to 953.4 per 100,000 workers.[99] At the end of World War I in 1917, only four states provided compensation for occupational disease.[100] The rest adhered to the accidental injury model.[101]

A. Breaking through the germ theory paradigm—deadly dust

Bacteriologists, progressive public health workers, scientists, and physicians were understandably enthralled by the breakthrough germ theory's enormous explanatory power. They resisted contrary or limiting evidence. The evolution of causal thinking about silicosis is recounted in the David Rosner and Gerald Markowitz's masterful study *Deadly Dust: Silicosis and the Politics of Occupational Disease in Twentieth Century America*.[102] Tuberculosis was seen as a disease of the poor, especially immigrants crowded in tenements.[103] Progressive ideology focused on social conditions and vice.[104] Though some were innocent victims of poverty, others were "temporarily enfeebled" through "alcoholism," and "other intemperate habits."[105] Bacteriologists and others at the New York City Department of Health were of the view that "the danger of infection is largely diminished by thorough ventilation."[106]

In the enthrall of the germ theory and the haughtiness that the upper classes so often display to the lower, the public health community emphasized improvement of workers' hygiene and their poor living conditions at home.[107]

But a brilliant statistician, then an actuary for the Prudential Life Insurance Company of Newark, Frederick L. Hoffman proved to be a key player. His analyses played a major role in overcoming the prejudices and misunderstandings of hygiene-oriented public

98. *Id.* at 41.
99. *Id.* at 42.
100. *Id.* at 84.
101. *Id.* at 86.
102. *Id.*
103. ROTHMAN, *supra* note 91, at 181.
104. *Id.* at 183.
105. *Id.* at 184.
106. *Id.* at 183–85.
107. *Id.*

health workers.[108] Hoffman conducted a careful study demonstrating the dose-response relationship between time in the cutting sheds and the development of silicosis.[109]

By the mid-1920s, the germ theory's limits had been recognized. Few doubted that inhalation of dust was the root of the lung problems affecting the workers.[110] In collaboration with the Public Health Service and the Vermont Division of Industrial Hygiene, the granite cutters union began exhaustive studies of the occurrence of silicosis.[111] The 1924–1926 study was intended to set limits for dust exposure.[112] But the measures led to "little if any improvement."[113] Significant changes in production did not come about until the late 1930s when silicosis among foundry workers, potters, glass blowers, metal miners, and grinders had been recognized.[114] Like the 1924–1926 study, a 1937–1938 U.S. Public Health Service study confirmed that practically every cutter with 15 years of experience "could be expected to develop the disease."[115]

Recognition of silicosis as an occupational disease spurred successful lawsuits. In 1932, James Hackett, the head of New York's Division of Industrial Hygiene, opined that successful civil actions had brought "silicosis within the range of practical politics."[116] But recognition of an occupational disease created other problems: insurers insisted on lung function tests, which often led to discharge of workers found to have developed silicosis.[117]

B. The Hawks Nest tunnel disaster

Attention to silicosis was heightened in 1936 when it was learned that at Gauley Bridge, West Virginia, as many as fifteen hundred men

108. ROSNER & MARKOWITZ, *supra* note 76, at 42–43

109. *Id.*; Hoffman is more often remembered for, and his reputation soiled by, his specious studies asserting the intellectual inferiority of African Americans. *See also* Megan J. Wolff, *The Myth of the Actuary: Life Insurance and Frederick L. Hoffman's* Race Traits and Tendencies of the American Negro, 121 PUB. HEALTH REPS., Jan.–Feb. 2006, at 84, 89, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497788/pdf/phr12100084.pdf.

110. ROSNER & MARKOWITZ, *supra* note 76, at 43.

111. *Id.*

112. *Id.*

113. *Id.* (quoting ANDREW D. HOSSEY ET AL., CONTROL OF SILICOSIS IN VERMONT GRANITE INDUSTRY, at x (1957)).

114. ROSNER & MARKOWITZ, *supra* note 76, at 43.

115. *Id.*

116. *Id.* at 78 (quoting James D. Hackett, *Silicosis*, N.Y. DEP'T LAB. INDUS. BULL., Dec. 1932, at 11).

117. ROSNER & MARKOWITZ, *supra* note 76, at 79.

had died of silicosis—almost half of whom were Union Carbide workers digging the Hawks Nest hydro-electric tunnel.[118] The tragedy was powerfully memorialized by poet Muriel Rukeyser in *The Book of the Dead*.[119]

Overwhelmingly black, the survivors returned home.[120] The ill and families of the deceased received no workers' compensation. The inadequacy of tort remedies was demonstrated; there were only 538 suits for damages.[121] The cases settled for an aggregate of $200,000—of which one-third went to counsel fees. Tort thus provided compensation for only a fraction of those sickened.[122]

Public awareness of silicosis dramatically increased due to the tragedy. With the support of the Roosevelt administration, Congress commissioned a study by the Secretary of Labor. In 1936, the progressive Secretary Florence Perkins[123] convened a National Silicosis Conference.[124] Despite the Secretary's sympathy, the conference was industry dominated. Management argued that silicosis was a disease that had attracted "shyster" lawyers and "quack" doctors.[125] Changes in techniques had the disease on the way out argued a lawyer for Owens-Illinois Glass Company.[126]

Rosner and Markowitz recount that John Frey of the American Federation of Labor argued at the conference that silicosis was a problem for workers even before they became disabled. When detected early, workers were often discharged.[127] The disease was not a thing of the past, but rather continued to afflict workers by the hundreds of thousands or millions.[128] The National Conference supported the development of exposure standards and urged that decisions on compensation be made by expert medical boards—not juries and judges.[129] Despite the support of Perkins, the Department of Labor

118. *Id.* at 96.
119. *See* MURIEL RUKEYSER, THE BOOK OF THE DEAD (1938).
120. ROSNER & MARKOWITZ, *supra* note 76, at 98.
121. *Id.*
122. *Id.*; *see also* William "Rick" Crandall & Richard E. Crandall, *Revisiting the Hawks Nest Tunnel Incident: Lessons Learned from an American Tragedy*, 8 J. APPALACHIAN STUD. 261, 271 (2002).
123. *See generally* KIRSTIN DOWNEY, THE WOMAN BEHIND THE NEW DEAL (2010).
124. ROSNER & MARKOWITZ, *supra* note 76, at 102.
125. *Id.*
126. *Id.*
127. *Id.* at 113.
128. *Id.*
129. *Id.* at 118–19.

Senate Bill 2256 introduced in 1939 failed.[130] It would have provided funds to the states in order to give benefits to silicosis claimants.[131]

With the arrival of war, public attention to the silicosis issue declined. At that time, the industrial efforts, particularly ship building, exposed as many as 4.5 million shipyard workers to asbestos as they filled bulkheads with the fire-retardant mineral. In the 1940s there was a flare up of interest due to the dreadful epidemic among zinc miners in the Tri-state Mining District near the intersection of Missouri, Kansas, and Oklahoma; the crisis was addressed by a Tri-state Conference which drew Labor Secretary Florence Perkins.[132] But after that flare-up, interest in occupational health again receded.[133] Eventually changes in production—the decline of granite cutting, etc.—reduced the incidence of new exposures, antibiotics helped to reduce the rate of tuberculosis, and the issue faded from view until a similar but more dangerous pulmonary pneumoconiosis[134] known as asbestosis again placed occupational disease in the "dusty trades" in the forefront of public attention.[135]

IV. ASBESTOS: THE MIRACLE MINERAL AND THE NIGHTMARE THAT FOLLOWED

In the 1950s, Dr. Irving Selikoff presided over a tuberculosis clinic in Paterson, New Jersey. He observed the incidence of lung disease among workers at the Union Asbestos and Rubber Company.[136] Attention had been drawn to asbestos and health when Dr. Selikoff initiated and organized the 1964 conference, Biological Effects of Asbestos.[137] Selikoff brought together researchers from around the

130. *Id.* at 130–33.

131. *Id.*

132. *Id.* at 135; *see also* Brown, *"Young Men Are Dying"—Frances Perkins' Visit to Joplin*, HIST. JOPLIN (May 20, 2011, 6:25 AM), http://www.historicjoplin.org/?p=449.

133. ROSNER & MARKOWITZ, *supra* note 76, at 165–69.

134. *Pneumoconioses*, NAT'L INST. OCCUPATIONAL SAFETY & HEALTH, https://www.cdc.gov/niosh/topics/pneumoconioses/ (last updated Aug. 24, 2017).

135. *See generally* I. J. Selikoff et al., *The Occurrence of Asbestosis Among Insulation Workers in the United States*, 132 ANNALS N.Y. ACAD. SCI. 139 (1965) [hereinafter Selikoff et al., *Occurrence of Asbestosis*].

136. Bruce Lambert, *Irving J. Selikoff is Dead at 77, TB Researcher Fought Asbestos*, N.Y. TIMES (May 22, 1992), http://www.nytimes.com/1992/05/22/nyregion/irving-j-selikoff-is-dead-at-77-tb-researcher-fought-asbestos.html. For more information on the Union Asbestos and Rubber Company, see *Union Asbestos and Rubber Co.*, ASBESTOS.COM, https://www.asbestos.com/companies/unarco.php (last visited Nov. 10, 2017).

137. *See generally* SELIKOFF, *supra* note 60.

world.[138] The proceedings demonstrated the toll being inflicted on workers who used the material.[139] Eventually Selikoff would estimate the toll of the substance in an ongoing landmark study of insulation workers.[140] In his landmark 1973 *Borel v. Fibreboard*[141] opinion, Federal Circuit Judge John Minor Wisdom noted that Selikoff's study found that:

> Among the asbestos insulation workers examined by us, evidence of pulmonary asbestosis was present in almost half the men examined. In this evaluation, radiological change has been used as the sole criteria. . . . Analysis of our data indicates that radiologically evident pulmonary asbestosis varied directly with the duration of exposure. Insulation workers with relatively short periods of exposure have a significantly lower incidence of pulmonary asbestosis and this, when present, was generally of minimal extent.[142]

The ongoing prospective study tracked insulations workers health. It, produced dramatic evidence of the illness and deaths caused by workplace asbestos exposure.[143] Selikoff and Lee's 1978 book[144] would often be cited by courts. In a study for the U.S. Department of Labor, Selikoff described the enormity of the epidemic estimating that 21 million Americans had been significantly exposed to asbestos.[145]

138. *See id.*

139. *See* Irving J. Selikoff, *Mortality Experience of Insulation Workers in the United States and Canada, 1943–1976*, 330 ANNALS N.Y. ACAD. SCI. 91 (1979).

140. *See id.*

141. 493 F.2d 1076 (5th Cir. 1973).

142. *Id.* at 1085.

143. Selikoff et al., *Occurrence of Asbestosis*, *supra* note 135, at 146.

144. *See* IRVING J. SELIKOFF & DOUGLAS H. K. LEE, ASBESTOS AND DISEASE (1978).

145. Jackson v. Johns-Manville Sales Corp., 750 F.2d 1314, 1337–38 (5th Cir. 1985). The opinion stated that:

> Dr. Irving Selikoff, in a 1981 study for the Department of Labor estimated that more than 21 million living American workers have been significantly exposed to asbestos during the past forty years. More conservative estimates have placed the number of individuals who experienced significant exposure at between eight and eleven million or at over thirteen million.
>
> Dr. Selikoff anticipates 200,000 deaths before the year 2000 because of asbestos-associated diseases. Paul MacAvoy of Yale University forecasts excess mortality due to asbestos through 2015 will range between 154,600 and 450,600, with the most probable estimate set at 265,000. Johns-Manville anticipates only 18,700 excess mesothelioma deaths and 55,120 excess lung cancer deaths through 2009. These estimates chart only asbestos-related deaths, not disabilities.

Selikoff's authoritative studies were relied upon by courts[146] in the litigation arising from New York naval shipyard work, and by OSHA in its 1986 Final Rule on asbestos.[147]

After the 1964 New York conference there was no turning back. As Judge Robreno notes, Selikoff's seminal methodical environmental studies of morbidity and mortality among insulation workers provided powerful and irrefutable proof that asbestos caused, not only lung scarring asbestosis, but also lung cancer and pleural and abdominal mesothelioma.[148] Selikoff's work and increasing environmental awareness were essential prologues motivating the passage in 1972 of the Occupational Safety and Health Act, which was quickly followed by the emergency rule that effectively barred the use of asbestos.[149] That of

> Not all individuals who were exposed to asbestos or even all of those who will die of asbestos-related diseases will actually bring suit. The Epidemiology Research Institute has estimated that Johns-Manville faces between 30,000 and 120,000 suits, with 45,000 set as the most probable number. Paul MacAvoy has estimated that there will be over 200,000 new suits, while Conning and Company has placed between 83,000 and 178,000 by the year 2010. Despite substantial differences, all sources support the conclusion that asbestos producers and courts face an unprecedented number of claimants in the years to come.
>
> As latent claims are developing over time, the likelihood that an injured party will go to court is increasing rapidly. Only 3% of the asbestos-related deaths between 1967–1968 resulted in law suits, but by 1975–76, this figure had risen to 32%. In estimating the numbers of future suits, experts are assuming that by 1992 all asbestos-related deaths will result in litigation. When this increasing propensity to sue is combined with mounting numbers of injured parties the burden on both producers and courts stemming from the asbestos litigation becomes staggering.

Id.

146. *In re* Joint E. & S. Dist. Asbestos Litig., 52 F.3d 1124, 1134–35 (2d Cir. 1995) (affirming the sufficiency of testimony based on studies by Selikoff).

147. *Jackson*, 750 F.2d at 1331 ("Because the insidious diseases giving rise to these claims have latency periods ranging up to forty years, the injuries of many plaintiffs will not become manifest for years to come.").

> OSHA is aware of no instance in which exposure to a toxic substance has more clearly demonstrated detrimental health effects on humans than has asbestos exposure. The diseases caused by asbestos exposure are life-threatening or disabling. Among these diseases are lung cancer, cancer of the mesothelial lining of the pleura and peritoneum, asbestosis, and gastrointestinal cancer. Of all of the diseases caused by asbestos, lung cancer constitutes the greatest health risk for American asbestos workers. Lung cancer has been responsible for more than half of the excess mortality from asbestos exposure in some occupational cohorts.

Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite, 51 Fed. Reg. 22,612, 22,615 (June 28, 1986) (to be codified at 29 C.F.R. pt. 1910, 1926).

148. Robreno, *supra* note 7, at 103; *see generally* MacLaury, *supra* note 45.

149. *See* Johns-Manville Corp. v. United States, 13 Cl. Ct. 72 (Fed Cl. 1987), *vacated*, 855 F.2d 1571 (Fed. Cir. 1988).

course was an enormous advance, brought about by labor and health advocates.

Neither silica exposure standards nor any research into the particular form of pneumoconiosis called asbestosis had prevented the ubiquitous industrial use of the mineral. The long latency periods of asbestosis, lung cancer, and mesothelioma meant that the epidemic first garnered close attention in the 1960s, while thousands of new exposures were still occurring. But once asbestos diseases were recognized, the compensation system was able to respond—even if inadequately. Workers got treated and received modest partial disability payments. The most ill received Social Security disability benefits, and their dependents received death benefits from workers' compensation. The only force that could further reduce the workers' losses was third-party product liability actions.

A. The era of mass tort claims—asbestos

In *Borel v. Fibreboard*, Judge Wisdom found the plaintiff's evidence showed "that the defendant manufacturers either were, or should have been, fully aware of the many articles and studies on asbestosis."[150] During Clarence Borel's thirty-three year working career from 1936 to 1969:

> [N]o manufacturer ever warned contractors or insulation workers, including Borel, of the dangers associated with inhaling asbestos dust or informed them of the [American Council of Governmental Industrial Hygienists] threshold limit values for exposure to asbestos dust. Furthermore, no manufacturer ever tested the effect of their products on the workers using them or attempted to discover whether the exposure of insulation workers to asbestos dust exceeded the suggested threshold limits.[151]

Massive litigation followed.

The course of the litigation has been described many times, but one of the most informative is an opinion by Court of Claims Judge Christine Nettesheim.[152] Johns Manville sought to recover its losses from the United States, which had required asbestos in its

150. 493 F.2d 1076, 1086 (5th Cir. 1973).
151. *Id.*
152. *Johns-Manville Corp. v. United States*, 13 Cl. Ct. 72 (1987).

specifications for the Navy's massive ship building campaign.[153] Judge Nettesheim described the manner in which the asbestos material was used in Naval construction, capturing the dust-generating process.[154] Judge Nettesheim described the state of the litigation: "[Suits against Asbestos processor Johns Manville] were coming in at a rate of 425 per month as of 1982. One half of the cases pending in 1982 involved shipyard workers, and one half of this number resulted from exposures occurring solely or in part during World War II."[155] By 1986, 12,630 cases had been filed against Johns Manville.[156]

Laments about mass tort litigation are common: the bankruptcy of over seventy companies, enrichment of plaintiffs' lawyers, seventy billion dollars on defense and indemnification, protracted litigation, clogged courts, political logjams that prevent an efficient mechanism to resolve claims, and evidence that the most seriously injured are underpaid and the minimally injured are overpaid.[157] But, as discussed below, mass third-party litigation greatly increased the competence of the courts and improved the law.

Plaintiffs' lawyers used the evidence amassed by the heroic New Jersey pulmonologist and others to determinedly confront the many difficult issues in asbestos cases: identification of the defendant suppliers; multiple suppliers; multiple employers; apportionment of liability; proving causation of disease; the impact of smoking, the problem of latency—delayed development of disease many years after inhalation—when witnesses and records (if any) were unavailable; and the increasingly skillful use of epidemiological evidence.[158] The latter

153. *Id.* at 76–80.

154. *Id.*

155. *Id.* at 79.

156. *Id.*

157. *See, e.g.*, *In re* Asbestos Pers. Injury & Wrongful Death Asbestos Cases, No. 92344501, 1992 WL 12019620 (Md. Ct. Spec. App. 2001); West Virginia *ex rel.* Mobil Corp. v. Gaughan, 565 S.E.2d 793 (W. Va. 2002) (consolidating claims of eight-thousand plaintiffs and two hundred-fifty defendants); West Virginia v. MacQueen, 479 S.E.2d 300 (W. Va. 1996); Lester Brickman, *Ethical Issues in Asbestos Litigation*, 33 HOFSTRA L. REV. 833 (2005); Paul F. Rothstein, *What Courts Can Do in the Face of the Never-Ending Asbestos Crisis*, 71 MISS. L.J. 1, 14–20 (2001); Victor E. Schwartz et al., *Addressing the "Elephantine Mass" of Asbestos Cases: Consolidation Versus Inactive Dockets (Pleural Registries) and Case Management Plans that Defer Claims Filed by the Non-Sick*, 31 PEPP. L. REV. 271, 281–83 (2003); Mark Behrens & Phil Goldberg, *Asbestos Litigation Reform Momentum Builds in US*, FINANCIER WORLDWIDE (Mar. 2016), https://www.financierworldwide.com/asbestos-litigation-reform-momentum-builds-in-us; Joe Nocera, *The Asbestos Scam*, N.Y. TIMES (Dec. 2, 2013), https://nyti.ms/2l13aGa.

158. For further discussion, see generally Hon. Helen E. Freedman, *Selected Ethical Issues in Asbestos Litigation*, 37 SW. U. L. REV. 511 (2008).

had the benefit of equipping plaintiffs' lawyers for the next wave of mass litigation—drugs and medical devices.[159]

V. THIRD-PARTY MASS PRODUCT LIABILITY LITIGATION INVIGORATED TORT

Asbestos litigation challenged courts in three ways: its massive scale presented organizational challenges, delayed manifestation of disease, and multiple, often unmeasurable, exposures presented challenging problems of apportionment of liability. Complex scientific evidence regarding inferential proof of causation of disease was new to the courts, which now had to assess the reliability and sufficiency of epidemiological evidence. Epidemiology is not merely a statistical method. It is based on a combination of population studies, pathology, and clinical medicine.[160]

A. The organizational challenge

Asbestos third-party litigation challenged the courts because of the large number of cases, presenting courts with a choice: try cases one by one, allow FRCP 23 class actions, or manage the litigation collectively through multi district litigation which permits transfer of cases for "coordinated or consolidated pretrial proceedings"[161], but in practice aggregated cases for settlement. The first option was a prescription for massive delays in justice—for both plaintiffs and defendants. Although it had some support,[162] the class action approach was rejected by the Supreme Court in *Amchem Products, Inc. v. Windsor*.[163] The Court there found that individual issues predominated over collective ones,

159. *See generally* Hon. Helen E. Freedman, *Products Liability Issues in Mass Torts—View from the Bench*, 15 TOURO L. REV. 685 (1999).

160.

> While epidemiologic information is at times derived from a much wider spectrum of biologic and medical disciplines, these three—*clinical medicine*, pathology, and biostatistics—have almost universal application in epidemiology. Indeed, epidemiology may be thought of as the joint application of the three in the search for further understanding of disease etiology.

Jennings v. Baxter Healthcare Corp., 14 P.3d 596, 607 (Or. 2000) (en banc) (quoting George W. Conk, *Against the Odds: Proving Causation of Disease with Epidemiological Evidence*, 3 SHEPARD'S EXPERT & SCI. EVIDENCE Q. 103, 120 (1995)).

161. 28 U.S.C. § 1407 (2012).

162. Georgene Vairo, *Is the Class Action Really Dead? Is That Good or Bad for Class Members?*, 64 EMORY L.J. 477, 528–29 (2014).

163. 521 U.S. 591, 622 (1997).

making mass personal injury actions uncertifiable as class actions.[164] The consequence was to establish the Multi-District Litigation Panel as the dominant form of management of large scale tort litigation for personal injuries.[165]

B. Expert testimony—Daubert *and the 'Junk Science' battle: raising the quality of expert testimony*

By 1991, it was estimated that there were 715,000 asbestos personal injury claims pending in federal and state courts.[166] Almost all of them involved workplace exposures to the deadly mineral fibers. They presented judges with enormous challenges, not only in docket control, but also in legal doctrine. Judge Robreno, who managed the federal MDL-875 from 2008–2013, stated that "the cases involved 'difficult issues involving the interface of law and science intersect with the uncertainties of substantive law.'"[167] Judge Robreno explained:

> Where there are multiple possible causes of the disability, may liability be apportioned among numerous defendants, or must the plaintiff prove that the wrongdoing of a particular defendant is the predominant cause? What is the liability of a parent corporation for claims against a subsidiary that were latent at the time the subsidiary was acquired? What is the applicable statute of limitations, and when should the period of limitation be deemed to have commenced? Are the plaintiffs entitled to compensation for "pain and suffering" associated with the fear of illness or death? All these legal issues are governed by the tort law of each state.[168]

The scale and intensity of mass tort litigation magnified the issues, as Judge Robreno observed. Ours is an adversary system. Each side tests the other's evidence, and tries to present its own most effectively.

164. *Id.*

165. *See, e.g.*, MANUAL FOR COMPLEX LITIGATION (FOURTH) §§ 22.35–.37 (2004); Eldon E. Fallon et al., *Bellwether Trials in Multidistrict Litigation*, 82 TUL. L. REV. 2323, 2324–25 (2008); Hellerstein et al., *supra* note 56, at 176–77.

166. *See generally* Rothstein, *supra* note 157.

167. Robreno, *supra* note 7, at 106 (quoting Paul D. Carrington, *Asbestos Lessons: The Consequences of Asbestos Litigation*, 26 REV. LITIG. 583, 591 (2007)).

168. Robreno, *supra* note 7, at 107 (quoting Carrington, *supra* note 177, at 591).

Causation of disease is a particularly closely contested issue. It has long roots. The drive to identify ground stone dust rather than germs, nutrition, or hygiene as the cause of granite workers' lung disease had helped to advance the use of bio-statistics. Frederick Hoffman, the Prudential actuary, became an important figure on whom the U.S. Bureau of Labor Statistics relied.[169] Since silicosis had a single cause, little, if any, attention was given to apportionment of liability because joint and several liability was the law at the time, and contributory negligence was a complete defense.[170]

Silicosis is a signature disease. It is attributable only to silica dust. More problematic is how to infer individual causation among multiple sufficient causes. One hundred years ago the New York Court of Appeals struggled with an upturn in the incidence of typhoid in upstate New York.[171] The City of Rochester had two systems of water supply, one potable supply for drinking water and the other a non-potable supply for firefighting.[172] The potable water became contaminated and many became sick.[173] But typhoid was an endemic disease with many possible sources. The court rejected the argument that the plaintiff must rule out all possible non-negligent causes.[174] It would suffice that when there are two causes or more that the plaintiff need only show "with reasonable certainty that the direct cause was one for which the defendant was liable."[175] Two physicians, relying on a bacteriologist's proof of contamination and a "table of statistics" for a period of several years, opined that, in their opinion, the plaintiff had presented sufficient evidence to conclude he had "contracted typhoid from drinking polluted water."[176] The New York high court's use of circumstantial evidence—ruling out possible causes to make a reasonable inference of causation (a method today known as differential etiology)—was sound.[177]

169. ROSNER & MARKOWITZ, *supra* note 76, at 24–25, 42.

170. Federal Employers Liability Act, 45 U.S.C. § 53 (1908) (allowing apportionment according to fault). *See generally* RESTATEMENT (SECOND) OF TORTS: CONTRIBUTORY NEGLIGENCE DEFINED § 463 (AM. LAW INST. 1965); RESTATEMENT (SECOND) OF TORTS: JOINT AND SEVERAL LIABILITY § 979 (AM. LAW INST. 1965); RESTATEMENT (THIRD) OF TORTS: APPORTIONMENT OF LIABILITY §§ 12–17 (AM. LAW INST. 2000).

171. Stubbs v. Rochester, 124 N.E. 137, 140 (N.Y. 1919).

172. *Id.* at 137.

173. *Id.* at 138.

174. *Id.* at 140.

175. *Id.*

176. *Id.* at 139.

177. *In re* Paoli R.R. Yard PCB Litig., 35 F.3d 717, 761 (3d Cir. 1994); Creanga v. Jardal, 886 A.2d 633, 639–40 (N.J. 2005); *see also* Ruggiero v. Warner Lambert, 424 F.3d 249, 254 (2d Cir. 2005); John B. Wong et al., *Reference Guide on Medical Testimony*, *in*

Nor was much attention paid to evidentiary reliability. The case long cited for admissibility of a scientific technique—*Frye v. United States*—rejected the use of an early lie detector test because its theory was "not generally accepted."[178] But until Federal Rule of Evidence 702 was adopted in 1974, the only courts relying on *Frye*'s "general acceptance" standard were criminal prosecutions.[179] There was skepticism about the use of scientific evidence because it was feared that jurors' awe of the scientist could undermine the integrity of jury verdicts.[180] Judges had restricted use of expert testimony by such means as rulings that, where a matter was within the common knowledge of the jury, expert opinion evidence could be excluded as unnecessary.[181] The key 1974 rule change was Federal Rule of Evidence 702. It provided that expert opinion testimony was admissible if it would "assist" the trier of fact.[182]

The adoption of the new Federal Rules of Evidence was coincident with the Fifth Circuit's landmark asbestos opinion in *Borel v. Fiberboard Paper Products Corp.*[183] Judge John Minor Wisdom's landmark Fifth Circuit opinion is widely credited with opening the floodgates of asbestos product liability litigation.[184] Soon thereafter Irving Selikoff's book *Asbestos and Disease* was published.[185] It has

FED. JUDICIAL CTR. & NAT'L RESEARCH COUNCIL OF THE NAT'L ACADS., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 687, 704–07 (3d ed. 2011) [hereinafter REFERENCE MANUAL ON SCIENTIFIC EVIDENCE].

178. United States v. Solomon, 753 F.2d 1522, 1526 (9th Cir. 1985) (citing Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923)) (explaining that expert opinion based on a scientific technique "is admissible if it is generally accepted as a reliable technique among the scientific community").

179. A Westlaw key cite search for cases citing *Frye v. United States* shows seventy-two cases, virtually all criminal cases, until the adoption of Federal Rule of Evidence 702 in 1974.

180.

> Scientific evidence impresses lay jurors. They tend to assume it is more accurate and objective than lay testimony. A juror who thinks of scientific evidence visualizes instruments capable of amazingly precise measurement, of findings arrived at by dispassionate scientific tests. In short, in the mind of the typical lay juror, a scientific witness has a special aura of credibility.

EDWARD C. CLEARY, MCCORMICK'S HANDBOOK OF THE LAW OF EVIDENCE § 185, at 437 (2d ed. 1972).

181. James M. Doyle, *Applying Lawyers' Expertise to Scientific Experts: Some Thoughts About Trial Court Analysis of the Prejudicial Effects of Admitting and Excluding Expert Scientific Testimony*, 25 WM. & MARY L. REV. 619, 619 n.2 (1984).

182. *Id.* at 628 (citing FED. R. EVID. 702).

183. 493 F.2d 1076 (5th Cir. 1973).

184. Robreno, *supra* note 7, at 105 n.44.

185. *See generally* SELIKOFF & LEE, *supra* note 141.

been relied upon in ninety-one published opinions.[186] But phenomena like "synergistic effects" of asbestos use and tobacco exposure created challenging proof problems.[187] At the outer limit, one had to show "regular, frequent, and proximate" exposure to the dust.[188]

This wide scale use of expert opinion testimony in so-called "toxic tort" cases changed the course of litigation.[189] Judge Robreno, manager of the MDL-875 for many years, wrote "[b]y the late 1980s, it was clear that the courts were faced with the most complicated litigation in substance and far-reaching in impact in American history."[190] But these massive asbestos product liability cases—virtually all arising from third-party workplace tort actions—greatly increased the competence of the courts in handling scientific evidence.[191]

The high point of strict liability in tort was the New Jersey Supreme Court's 1982 *Beshada v. Johns Manville* decision.[192] The court rejected the asbestos manufacturer's claim that it could not have known of the dangers of asbestos until Selikoff's 1964 conference. The court found as a matter of law that the company was chargeable with knowledge of the dangers of its products. That principle gave rise to a duty to warn users.[193]

Strict liability focused attention on how cause in fact could be established in what were commonly referred to as "toxic tort" cases. One view, embraced by Judge Jack Weinstein in the "Agent Orange" cases, was that only biostatistical evidence could suffice, and that in such a case "[a]t least a two-fold increase in incidence of the disease

186. Westlaw KeyCite search shows ninety-one published decisions from all U.S. courts.

187. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM ch. 5, § 28, cmt. c (AM. LAW INST. 2010) (amended 2016).

188. Thacker v. UNR Indus., Inc., 603 N.E.2d 449, 457 (Ill. 1992); Spain v. Owens Corning Fiberglass Corp., 710 N.E.2d 528, 533 (Ill. App. Ct. 1999), *overruled by* Nolan v. Weil-McLain, 910 N.E.2d 549 (Ill. 2009). *See generally* Wilson v. Johns-Manville Sales Corp., 684 F.2d 111 (D.C. Cir. 1982).

189. RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM ch. 5, § 28, cmt. c (AM. LAW INST. 2010) (amended 2016); Robreno, *supra* note 7, at 138.

190. Robreno, *supra* note 7, at 107.

191. *See* Margaret A. Berger, *The Supreme Court's Trilogy on the Admissibility of Expert Testimony*, *in* REFERENCE MANUAL ON SCIENTIFIC EVIDENCE, *supra* note 177, at 9, 17–18. In 2011, the Federal Judicial Center and the National Research Council of the National Academies published the third edition of their *Reference Manual on Scientific Evidence.* Judges are advised on admissibility and the nature of science, and provided "reference guides" on the methods of fourteen fields including statistics, survey research, economic damages, exposure science, epidemiology, and toxicology.

192. 447 A.2d 539 (N.J. 1982).

193. *Id.* at 549.

attributable to . . . exposure is required to permit recovery if epidemiological studies alone are relied upon."[194] This measure had been suggested as a legal threshold for epidemiological proof of causation of disease by Bert Black & David E. Lilienfeld.[195]

In 1987 Weinstein and Berger, in their treatise, pointed more broadly to seven factors for evaluating the admissibility of scientific evidence: 1) the technique's general acceptance in the field; 2) expert's qualifications and stature; 3) the use made of the technique; 4) potential rate of error; 5) existence of specialized literature; 6) the novelty of the invention; and 7) the degree of objectivity and subjectivity of the technique.[196]

Many courts emphasized a plaintiff-friendly methodology-based standard for determining evidentiary reliability with respect to novel or emerging complex scientific theories of causation.[197] In *Rubanick v. Witco Chemical* the New Jersey Supreme Court took an expansive view of competence of experts. It found admissible testimony on individual causal relationship by a research chemist and cancer researcher—even though he had never, and would never, examine or diagnose a patient.[198] In *Landrigan v. Celotex*, an asbestos case in which plaintiff alleged he contracted colon cancer due to workplace asbestos exposure, the New Jersey high court rejected the doubled risk standard embraced by Judge Weinstein and propounded by Black—in favor of a circumstantial all-things-considered approach.[199]

Defendants pressed to sharply restrict the use of expert testimony to opinions which were "generally accepted." In *Daubert v. Merrell Dow Pharmaceuticals*, the Ninth Circuit, in an opinion by the influential Judge Alex Kozinski, embraced the argument, saying:

194. *In re* Agent Orange Prod. Liab. Litig., 597 F. Supp. 740, 785 (E.D.N.Y. 1984).

195. *See* Bert Black & David E. Lilienfeld, *Epidemiologic Proof in Toxic Tort Litigation*, 52 FORDHAM L. REV. 732 (1984).

196. 3 JACK B. WEINSTEIN ET AL., WEINSTEIN'S EVIDENCE MANUAL ¶ 702[03] (1987).

197. *See, e.g.*, Christophersen v. Allied-Signal Corp., 902 F.2d 362, 363–67 (5th Cir. 1990) (holding plaintiffs' sole expert could testify that exposure to fumes containing nickel and cadmium caused decedent's colon cancer and that an expert causation opinion should be excluded only if "fundamentally unsupported" and "would not actually assist the jury in arriving at an intelligent and sound verdict"); Osburn v. Anchor Labs., Inc., 825 F.2d 908, 914–16 (5th Cir. 1987) (holing plaintiffs' experts could testify that chloramphenicol caused user's leukemia, that an expert's opinion "need not be generally accepted in the scientific community before it can be sufficiently reliable and probative to support a jury finding"); *see also* Graham v. Wyeth Labs., Inc., 906 F.2d 1399, 1404 (10th Cir. 1990) (holding plaintiffs' experts could testify that diphtheria, tetanus, and pertussis vaccinations caused plaintiffs' brain damage).

198. Rubanick v. Witco Chem. Corp., 593 A.2d 733, 735, 749 (N.J. 1991).

199. Landrigan v. Celotex Corp., 605 A.2d 1079, 1088–90 (N.J. 1992).

"[t]he best test of certainty we have is good science—the science of publication, replication, and verification, the science of consensus and peer review."[200]

In *Daubert*—a drug product liability case—the Supreme Court squarely faced the question of how a judge should review the admissibility of scientific evidence when offered.[201] While acknowledging that judges should act as "gatekeepers," the Court rejected the "general acceptance" standard as incompatible with Federal Rule of Evidence 702. The majority embraced as a test of admissibility the "soundness of the methods employed," directing judges to review, not conclusions, but methods, and recognized a category of "shaky but admissible evidence."[202]

Conservative judges, however, embraced the gatekeeping function with a vengeance. *Daubert* told judges to conduct a pre-trial review of complex scientific evidence.[203] Many courts saw it as a chance to thin dockets, using it in hundreds of cases to strike civil plaintiffs' claims.[204] The Supreme Court's 1997 embrace of the abuse of discretion standard of review of admissibility rulings gave judges wide discretion to act on their own preferences. Judges could effectively grant summary judgment on causation without being subject to de novo review.[205]

In 1999, the Supreme Court declared that all expert testimony was subject to the *Daubert* principles.[206] Justice Breyer's opinion for the court in *Kumho Tire Co. v. Carmichael* was a substantial victory for plaintiffs because it emphasized flexibility.[207] And, driven by the wide range of issues to be reviewed, Justice Breyer provided a sensible standard—that experts should use in court the degree of rigor customary in their fields.[208] Despite *Kumho*'s objective standard, scientific evidence met an uneven reception in the courts—advancing the rigor with which lawyers approached their proofs.

Shortly after *Daubert*, hoping to increase judicial competence, the Federal Judicial Center developed a *Reference Manual on Scientific*

200. 951 F.2d 1128, 1131 (9th Cir. 1991), *overruled by* Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993).

201. 509 U.S. 579 (1993), *codified by* FED. R. EVID. 702, *as recognized in* Kansas City S. Ry. Co. v. Sny Island Levee Drainage Dist., 831 F.3d 892 (7th Cir. 2016).

202. *Id.* at 596.

203. *Id.*

204. D. Michael Risinger, *Navigating Expert Reliability: Are Criminal Standards of Certainty Being Left on the Dock?*, 64 ALB. L. REV. 99, 147 (2000).

205. Gen. Elec. Co. v. Joiner, 522 U.S. 136, 138 (1997).

206. Kumho Tire Co., Ltd. v. Carmichael, 526 U.S. 137, 141–42 (1999).

207. *Id.* at 158.

208. *Id.* at 152.

Evidence to guide judges. Now in its third edition the Manual addresses "how science works," admissibility and "Reference Guides" on the use of statistics, estimation of economic damage, epidemiology, toxicology, and neuroscience, among other fields.[209]

Even after *Kumho*, plaintiffs' lawyers encountered substantial resistance by judges who embraced and often rigidly applied the four *Daubert*-suggested considerations—now codified in the Federal Rules of Evidence 702.[210] Jerome Kassirer and Joseph Cecil,[211] key contributors to the Federal Judicial Center's Reference Manual, identified the problem and presented their opinions in the pages of the *Journal of the American Medical Association* in 2002.[212] They explained: "[i]n some instances, judges have excluded medical testimony on cause and effect relationships unless it is based on published, peer reviewed, epidemiologically sound studies, even though practitioners rely on other evidence of causality in making decisions when such studies are not available,"[213] and that, "[c]ourts tend to assess separately the reliability of each component rather than assessing the reliability of the 'totality of the evidence' including all relevant clinical factors. In doing so courts fail to take into account the complex inferential process that lies at the heart of clinical method reasoning."[214]

As had been argued by pro-plaintiff experts in *Daubert*,[215] the Reference Manual seeks to teach judges that as former California Institute of Technology Vice Provost David Goodstein explained, "science is above all an adversarial process. It is an arena in which ideas do battle," thus fitting it comfortably into the law's adversarial

209. *See* REFERENCE MANUAL ON SCIENTIFIC EVIDENCE, *supra* note 177.

210. FED. R. EVID. 702 ("A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.").

211. Kassirer was the former editor of the New England Journal of Medicine. Joseph Cecil was director of the Reference Manual project at the Federal Judicial Center.

212. *See* Jerome P. Kassirer & Joe S. Cecil, *Inconsistency in Evidentiary Standards for Medical Testimony: Disorder in the Courts*, 288 J. AM. MED. ASS'N 1382 (2002).

213. *Id.* at 1382.

214. *Id.* at 1386.

215. Brief for Physicians, Scientists, and Historians of Science as Amici Curiae Supporting Petitioners, Daubert v. Merrill Dow Pharm., 509 U.S. 479 (1993) (No. 92-102).

framework.[216] That this proposition has such endorsement is a victory won by plaintiffs through protracted struggle.

C. Doctrinal challenges

The plaintiffs' lawyers and their efforts have been widely disparaged—their success painted as greed, or the product of dishonesty, etc. Professor Anita Bernstein—a stranger to the litigation—reviewed the evidence and recognized plaintiffs' lawyers' collective achievements as zealous advocates for their clients.[217] In her article *Asbestos Achievements*, she concluded from her review of the controversial history:

> Asbestos liability . . . reveals clients who were retained and compensated. Antagonists were won over. Claims were strengthened by aggregation. Settlements were negotiated. Procedural hurdles were overcome. Evidentiary rules were made more permissive. Statutes of limitation, the province of legislatures, were revised by judges in a plaintiff-favoring direction. Hazards were exposed. Large business corporations were brought to their knees.[218]

How did this come to pass?:

> Lawyers advocating for clients effected these achievements. They rewrote the law of civil procedure and torts, bringing redress to clients who had started out obstructed by conservative rules and presumptions. One may debate the merits of their doctrinal innovations; but at a minimum, their victories suggest new opportunities to other persons hurt by negligence and defective products. Even if one grants that these lawyers were as relentless, dishonest, and greed-crazed as their foes say—for the record, I will say here I doubt it—they set a record for achievement that, in magnitude, surpasses what almost anyone else in the history of American civil justice has ever accomplished.[219]

Regardless of where we stand personally in relation to the litigation, we can share in a collective recognition that the zeal lawyers bring to their

216. David Goodstein, *How Science Works*, *in* REFERENCE MANUAL ON SCIENTIFIC EVIDENCE, *supra* note 177, at 37, 44.

217. Anita Bernstein, *Asbestos Achievements*, 37 SW. U. L. REV. 691, 715 (2008).

218. *Id.*

219. *Id.*

cause is a powerful force and, as here, though imperfect, can do much to advance the cause of justice.

VI. NETWORKS AND WEBS: FROM MASS PRODUCTION TO ATOMIZATION AND DIGITALIZATION

Workers' compensation laws arose in the era of mass industrial production. They were an important progressive measure to protect workers from illness and impoverishment.

The common industrial working conditions of workers led them and their organizations—trade unions—to advocate the expansion of workers' compensation systems so as to benefit members and non-members. The labor movement and its progressive allies sought to provide health insurance and other workers' compensation benefits to even the lowliest employee in a non-union shop. Workers' compensation laws turned nearly all contracts of employment at will into contracts of adhesion—for the worker's benefit.

This was a dramatic transformation. It is no wonder that business attacked it. In 1911, the New York Court of Appeals agreed in *Ives v. South Buffalo Railway Co.*[220] It concluded that the legislation was an abrogation of freedom of contract, confiscatory because an employer who has done its duty under the common law was nonetheless compelled to pay compensation for harms which occurred despite satisfaction of its duty of reasonable care.[221] The state promptly amended the state constitution's Bill of Rights, empowering the state to establish a workers' compensation system as an exclusive remedy.[222]

220. 94 N.E. 431 (N.Y. 1911).

221. *Id.* at 440.

> If the legislature can say to an employer, 'you must compensate your employee for an injury not caused by you or by your fault,' why can it not go further and say to the man of wealth, 'you have more property than you need and your neighbor is so poor that he can barely subsist; in the interest of natural justice you must divide with your neighbor so that he and his dependents shall not become a charge upon the State?'

Id.

222.

> Nothing contained in this constitution shall be construed to limit the power of the legislature to enact laws for the protection of the lives, health, or safety of employees; or for the payment, either by employers, or by employers and employees or otherwise, either directly or through a state or other system of insurance or otherwise, of compensation for injuries to employees or for death of employees resulting from such injuries without regard to fault as a cause thereof, except where the injury is occasioned by the willful intention of the injured

In 1911, eleven states enacted workers' compensation laws. By 1926, forty-six states had workers' compensation laws. In 1948, the last state—Mississippi—made such systems nationwide.[223] But coverage of occupational diseases lagged. Some statutes set up a "schedule" or exclusive list, specifying particular diseases as work-related, while others used a more flexible, general definition.[224] By 1920, forty-five states and the federal government had workers' compensation laws.[225] But a 1964 report of the Bureau of Labor Standards found that coverage of occupational diseases still lagged behind that for accidental injury. At that time, only twenty-seven states allowed permanent partial disability for both accidental injuries and occupational diseases. The rest either barred indemnity for all occupational disease claims or sharply limited it, sometimes setting dollar caps but more often allowing no indemnity at all.[226] Nonetheless, there were significant numbers of cases. For example, in the period 1952–1961, the Industrial Commission of the Wisconsin Statistical Department reported that thousands of compensable occupational disease claims were settled each year—ranging from 1,277 in 1952 to 960 in 1961.[227] Arthur Larson reports that "[s]ince 1950, the number of states having occupational disease coverage has grown from forty-four to fifty, and the number having general coverage has risen from twenty-seven to forty-six."[228]

Workers' compensation across the board has afforded a public, rather than private remedy, and it has been broad in its definition of employment. While craftsmen were understood to be independent contractors, nearly everyone else has been treated as an employee. But

> employee to bring about the injury or death of himself or herself or of another, or where the injury results solely from the intoxication of the injured employee while on duty; or for the adjustment, determination and settlement, with or without trial by jury, of issues which may arise under such legislation; or to provide that the right of such compensation, and the remedy therefor shall be exclusive of all other rights and remedies for injuries to employees or for death resulting from such injuries; or to provide that the amount of such compensation for death shall not exceed a fixed or determinable sum; provided that all moneys paid by an employer to his or her employees or their legal representatives, by reason of the enactment of any of the laws herein authorized, shall be held to be a proper charge in the cost of operating the business of the employer.

N.Y. CONST. art. I, § 18.

223. SZYMENDERA, *supra* note 27, at 5, 29.

224. U.S. DEP'T OF LABOR & BUREAU OF LABOR STANDARDS, *supra* note 59, at 723.

225. *Id.*

226. *Id.*

227. *Id.* at 740.

228. 4-52 LARSON'S WORKERS' COMPENSATION LAW § 52.07 (2017).

in the brave new-networked world, the concept of independent contractor—familiar from tort law—threatens to sharply limit the scope of coverage. Both a public remedy and broad coverage are at risk. Uber asserts that its drivers (160,000 in California alone) are independent contractors who therefore must bear the risk of injury in a vehicular crash.[229] Workers' compensation has no cap on medical benefits, mandates disability benefits partially replacing lost wages, and affords death benefits. The effect of finding Uber's drivers to be independent contractors would be to leave them to the vagaries of state mandatory insurance laws, and their individual choices regarding what first party insurance to buy.[230] It is noteworthy that, according to NIOSH, motor vehicle crashes remain the leading cause of on-the-job death.[231]

That battle—worker or independent contractor—remains unresolved. Judge Edward Chen, the U.S. District Court Judge who is handling *O'Connor v. Uber Technologies*, declared the issue may be resolved either by a jury or a judge under the California Private Attorneys General Act.[232] The variances of coverage expectable from each state's independent contractor laws ideally would impel a national solution of the sort that the OSHA-created[233] National Commission on State Workmen's Compensation Laws urged in its 1972 report; the Commission urged coverage as broad as that afforded by Social Security, noting that only a third of states covered agricultural workers and almost none covered household workers.[234]

On the public remedy issue, the United States Court of Appeals for the Ninth Circuit has relegated Uber drivers—like consumers of AT&T mobile phone services[235]—to private arbitration, blocking a California doctrine that a bar on class actions was unconscionable.[236] That state law was held to be preempted by the Federal Arbitration Act, which

229. *See* O'Connor v. Uber Techs., Inc., 201 F. Supp. 3d 1110, 1113–14 (N.D. Cal. 2016).

230. *See generally* SZYMENDERA, *supra* note 27, at 11.

231. *Motor Vehicle Crash Facts*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/niosh/motorvehicle/resources/crashdata/facts.html (last updated Oct. 5, 2017).

232. 201 F. Supp. 3d 1110, 1132–35 (N.D. Cal. 2016).

233. *See* Occupational Safety and Health Act of 1970, Pub. L. No. 91-596, § 27, 84 Stat. 1590, 1616–1618 (1970) (codified as amended at 29 U.S.C. § 655 (2004)).

234. NAT'L COMM'N ON STATE WORKMEN'S COMPENSATION LAWS, THE REPORT OF THE NATIONAL COMMISSION ON STATE WORKMEN'S COMPENSATION LAWS 46–47 (1972), http://workerscompresources.com/?page_id=28 (follow "Chapters 1 & 2").

235. AT&T Mobility L.L.C. v. Concepcion, 563 U.S. 333, 347–52 (2011).

236. Mohamed v. Uber Techs., Inc., 836 F.3d 1102, 1110–12 (9th Cir. 2016) (reversing a finding of unconscionability by the trial court and holding that arbitrability is a matter for the arbitrator).

provides that contracts to arbitrate shall be treated like any other contract.[237]

Today, the strength of workers' compensation laws is under attack. Though it is unfashionable to say so, the class struggle continues and is much complicated by the change in technology. We are moving from a mass production factory model to a network-dominated and atomized workforce, which many confuse with freedom or autonomy.

Our objective should be to preserve and expand the universalizing principles pioneered by workers' compensation laws in the network era. And we should find a way to achieve the goals outlined in the 1972 report mandated by OSHA.[238] Expansion includes the mandatory extension of coverage to millions of home-workers, drivers, self-employed carpentry contractors, and laborers unreasonably classified as independent contractors.[239]

We need to establish that—like employers in the eight-hour-day era—owners and controllers of today's network businesses (Uber, Airbnb, RE/Max, Google, etc.) should be compelled to take on the kinds of responsibilities that were thrust upon direct employers one hundred years ago. Doctrinal tools like the relative "nature of the work" test, independent contractors, overtime, and minimum wage need to be tweaked to provide for today's "freelancers" and "part-timers" the kind of universal coverage that the progressive era reforms provided for the great majority of workers—even those in small businesses.

237. *Id.* at 1106, 1108; *see also* 9 U.S.C. § 2 (2012).

> A written provision in any maritime transaction or a contract evidencing a transaction involving commerce to settle by arbitration a controversy thereafter arising out of such contract or transaction, or the refusal to perform the whole or any part thereof, or an agreement in writing to submit to arbitration an existing controversy arising out of such a contract, transaction, or refusal, shall be valid, irrevocable, and enforceable, save upon such grounds as exist at law or in equity for the revocation of any contract.

Id.

238. *Report on State Workmen's Compensation Laws*, *supra* note 79, at 31–32.

239. 5-63 LARSON'S WORKERS' COMPENSATION LAW § 63.01 (2017).