4. The Battle for Clean Air: The Smoke Problem in Post–Civil War America

By R. Dale Grider

Throughout the history of the United States, many key policymakers have considered economic growth essential to a healthy and well-functioning social and political system. Such high-level policymakers as Alexander Hamilton, John Marshall, Henry Clay, Roger Taney, Andrew Carnegie, and Theodore Roosevelt played a major role in encouraging rapid economic growth. In the nineteenth century, growth was often less the result of natural economic processes than the consequence of positive intervention by government on behalf of business. Perhaps the most notable expression of this policy was the legislation enacted by the Republicans who held power during the Civil War and Reconstruction. Major pieces of legislation, like the Morrill Tariff, the National Banking Act, the Homestead Act, and the Railroad Act, signaled a new era of expansion under the favoring hand of the national government. This period, known as the Gilded Age, rested largely on the railroad, and the success of the railroad in many cases was insured by subsidies from the national government and tax shelters from the states. In addition, such state laws as the New Jersey Holding Company Act abetted the flight from competition to consolidation, a phenomenon common to almost every large-scale business enterprise during that time.

Environmental degradation of the industrial cities was a major result of public policy that encouraged rapid unregulated growth. Illustrative of the trade-offs made for the sake of industrial expansion was the problem of smoke pollution in the years between the 1880s and World War I. During this time, many American metropolitan centers were plagued by what was called the "smoke nuisance" or the "smoke evil."

Industrial-based cities were seldom built for aesthetic reasons. Sites were often chosen with a single goal in mind, that of joining goods and markets. Hence, many of the cities plagued by the smoke nuisance were built along the main traffic routes, which in the nineteenth century were rivers, canals, and lakes. Pittsburgh, for example, was built at the confluence of the Allegheny
and Monongahela rivers. Cincinnati was constructed near swampland in a "bandsnell" along the Ohio. St. Louis emerged at the highest point near the junction of the Missouri and the Mississippi. Louisville, Chicago, Detroit, and other midwestern communities likewise were built at strategic points along important waterways. All these cities were constructed in areas susceptible to inversions, high-pressure systems that trapped the smoke and other particulate matter.

Geographic setting alone did not make a city prone to the smoke problem. It was the energy source, in this case bituminous coal, which dirtied the air during inversions. Since communities tended to utilize the fuel that was nearest them, Pittsburgh, Cincinnati, St. Louis, and the other midwestern cities located near bituminous coalfields were more likely to develop a smoke problem at this time. Other major cities—New York, Boston, and Philadelphia—relied on anthracite coal from eastern Pennsylvania. San Francisco used natural gas. By and large, those cities that did not use bituminous coal as their major energy source were free from smoke. But without fail, where high-sulfuric bituminous coal was used, there was an air pollution problem. This fact prompted Thomas Darlington, New York's health commissioner, to attempt to ban the use of bituminous coal in the city even during the anthracite coal strike of 1902. And Pittsburghers knew the consequences of the shift from natural gas to coal back in 1892. One resident observed, "We are going back to the smoke. We have had four or five years of wonderful cleanliness in Pittsburgh... [When the city used gas as its primary energy source] we all fell better. We all looked better. We all were better."

By the turn of the century, the newspapers were reporting "Londoners," a combination of smoke and fog that was trapped in the city by an inversion. The accounts tell a story of darkness, of work stopped, of children sent home from school, of accidents. These "Londoners" were only an exacerbation of the problem that always existed. The editor of the St. Louis Globe-Democrat pointed out that "the atmosphere was so heavy that it retained the smoke poured into it. There was no more smoke than usual, but it hovered where it was made, and put itself into evidence not to be mistaken."

At the least, smoke, like other facts of urban life, indicated that the Industrial Revolution had brought a new order. As John C. Van Dyke stated, "There is the whirl of machinery, the shriek of whistles, the clang of bells, the strident grind of trolleys, the jar of trucks and cars. And the dirt! It is not in the street and the gutter alone, but in the air and against the blue sky." And, over thirty years before Van Dyke described the city of the "money god," Rutherford B. Hayes noted in his diary: "But now succeeds the iron age, the age of petroleum, of coal, of iron, of railways, of great fortunes suddenly acquired: smoke and dust covering, concealing or destroying the lovely landscape. Coarse, hard, material things." Oscar Handlin may have captured the essence of what was happening when he described the industrialization of Pittsburgh after the War of 1812. It did not matter that "a pall of smoke was depriving its buildings of...[that clean appearance so conspicuous in most American towns]. That smoke issuing forth from a rising number of stacks, was evidence of a birth of industry."

Those who longed for the economic growth that the new industrial order could provide felt that smoke was a nuisance to be endured. For many, a smoky sky was not simply a fact of urban life but a sign of progress and prosperity. As a result, much of the opposition to the crusade for clean air centered around the argument that smoke meant wealth and jobs. In describing the city where The Turmoil was set, Booth Tarkington caught the flavor of this theme:

There is a midland city in the heart of far, open country, a dirty and wonderful city, nestled dingily in the fog of its own smoke. The stranger must feel the dirt before he feels the wonder, for the dirt will be upon him instantly. It will be upon and within him since he must breathe it, and he may care for no other proof that wealth is here loved more than cleanliness."

Despite the willingness of many policymakers and citizens to tolerate polluted air for the sake of progress and prosperity, members of civic leagues and women's organizations during the Progressive Era began to voice their concern about the possible debilitating effects of smoke. They argued that the smoke was affecting the lives of homemakers and the stores of merchants. Smoke appeared to be responsible for such varied physical problems as increases in both pulmonary disease and the number of children wearing glasses. Many doctors attested that smoke affected the psychological health and well-being of the community. And it damaged everything from viaduct supports and new church walls to marble statuary and merchandise. By the 1920s it was next to impossible to wear a clean cream-colored suit in St. Louis. The only people who seemed to prosper were the owners of laundries."

The smoke nuisance was particularly debilitating to the health of those who lived in the industrial-based cities. Dr. J. B. Stoner, writing in Military Surgeon, asserted that statistics showed "there are more people subject to nasal, throat and bronchial troubles in a smoky city than in a clean city. There are also more fatalities from pneumonia, diphtheria and typhoid fever owing... to the lowering of vital forces as a result of the scarcity of sunshine, caused by heavy fogs of smoke." Dr. Charles A. L. Reed, former president of the
residents petitioned the police prosecutor's office to take action against the chimney of a nearby cleaning and dyeing establishment; these residents found it impossible to dry their laundry outside, for it became polka-dotted from the dirty air. In Milwaukee, the complaints were similar: "It is impossible for me to have my laundry work done at home because of the smoke that falls on the clothes while they are drying." Another resident complained, "Too much cannot be said of the smoke evil... It is indescribably bad. It is bad for the furniture, for the clothing, for the health, and for the temper." As the Yearbook of the Civic League of St. Louis stated, "No class of dwellers receives directly the unbearable burden of this plague as do the women."  

However, smoke menaced more than the affairs of the gentler sex. Gardeners, painters, lawyers, and merchants were also aware of the smoke's power to devastate and degrade the cities. In a series of interviews conducted by the Milwaukee Sentinel, an architect observed, "The smoke evil is increasing without doubt. I have noticed it at my home. Formerly I used only to paint my home every four or five years, but I find that although I painted it only a little over a year ago, it is time again to do the work."  

The chief forester in St. Louis and Cleveland saw the effects of the smoke on their trees. The St. Louis forester reported that, in the fiscal year 1905–06, the city's smoke had killed approximately one-third of the trees. In 1904, Cleveland's forester wrote that "the smoke from the factories and from the engines of the Lake Shore and Michigan Southern Railway is killing off the trees at the west side of Gordon Park... [A] continuous one means the entire destruction of this nice bit of woodland." Two years later he observed that "in the suburbs, where the smoke and gas from the factories are not so prevalent, we find large, handsome trees, but downtown they are stunted by the conditions under which they exist. Without constant care and attention, Cleveland will be treeless in a few years."

Indicative of the smoke's ever-present degradation of lives, health, homes, trees, and just about everything else was the following report in the Pittsburgh Press: "A large American flag turned black, as a result of dense smoke pouring from the tall stack of a plant on Old Avenue." The flag had been new when placed above the stack just two or three weeks earlier, "but as a result of being subjected to the dense volumes of black smoke, it now hangs like a black flag."

The effects of smoke on health did not begin to be understood until the late nineteenth century, and smoke would not be regarded as an inefficient waste of resources until even later. But the roots of the smoke abatement crusade lay in yearnings for the preindustrial city. Many people could not abide these "coarse, hard, material things" associated with the new urban way of life. A
rereading of Van Dyke’s description of the business city in 1908 will make this point clear: “the whirl of machinery, the shriek of whistles, the clang of bells, the incessant grind of trolleys, the jar of trucks and cars. And the dirt! It is not in the street and the gutter alone, but in the air and against the blue sky.” Every phrase used is aesthetically displeasing. One Pittsburgher of the 1890s was certain that the drive for wealth had altered his fellow citizens’ sense of values, allowing aesthetic concerns to fall by the wayside. “We groped in the murky atmosphere content to gather dollars and only dollars...What incentive could there be to build a fine house when we know that in a few months it would be declared defaced or defiled.” Aesthetic reasons were prime movers in getting the elite women’s clubs like the Twentieth Century Club in Pittsburgh or the Wednesday Club in St. Louis to enter the fray against the smoke nuisance. Smoke’s assault caused a good many women to think about the good old days, when the cities were not plutonium or filled with the soot and grime that bred immorality.

From the beginning, smoke abatement attracted its most spirited support from women’s clubs and other women’s organizations. Many homemakers were consistently exposed to the ill effects of smoke pollution, and women’s groups were a logical outlet for venting their concern. But since only those with leisure time could devote themselves to most reformist causes, upper-middle-class women directed the clubs’ anti-smoke efforts. Leadership in the local smoke abatement campaigns included Mrs. John B. Sherwood of Chicago, Mrs. Charles P. Taft of Cincinnati, Miss Kate Mc Knight of Pittsburgh, and Mrs. Ernest R. Kroeger of St. Louis, all members of the upper middle class, if not of the social register. Both the Wednesday Club of St. Louis and the Twentieth Century Club of Pittsburgh, in the years prior to World War I, constructed smokehouses that indicated a membership of great wealth. Despite this tie with the social elite, these women were interested in far more than keeping their cities free of pollutants during world’s fairs and expositions. They were in the vanguard of the smoke abatement crusade; indeed, they were more than other groups were the radicals in the movement as they sought immediate results.

In many cases, the women, even those of social prominence, did the dirty work, the tedious work, offering their services to the smoke inspectors to monitor smokestacks. In 1910, the Women’s Organization of St. Louis was even assisting in the testing of smoke-consuming devices. The following year, they joined forces with Colonel James Gay Butler, again monitoring offenders and feeding the information to his central staff. Butler had put his money and material into the fray precisely because he felt the inspector was not doing enough.

The same sort of activity was going on in other cities. The Ladies’ Health Association of Pittsburgh helped galvanize support for a stronger smoke ordinance in 1892. The Women’s Club of Cincinnati appealed to Mayor Julius Fleischmann to move to abate the smoke nuisance in that city, and the club later was a forum used by Dr. Charles Reed when he set about establishing a smoke abatement league in Cincinnati. In Chicago, Mrs. Charles Sergel was elected president of the Chicago Anti-Smoke League. In an article in 1912, Mrs. Raymond Bremer noted the activities of various women’s groups arrayed against the smoke problem, not only in St. Louis, Cincinnati, and Chicago but also in Salt Lake City, Baltimore, and Youngstown, Ohio. It was only fitting that Booth Tarkington chose a group of women to petition the titan of his novel to stop the smoke.

To a lesser degree, but with more profound consequences in the long run, engineers were also involved in the battle for clean air. For most of these mechanical and stationary engineers, the question of smoke abatement was largely a professional one. As they saw it, smoke was a residual effect of modern industrialization, and an unnecessary one at that. It was a problem posed by an inefficient use of resources, and they saw their job as one of cutting out this waste. As early as the 1880s, several of these engineers heard and delivered papers on the smoke problem and its remedy. The remedy was generally the installation of such technical advances as stokers and down-draft furnaces. However, the engineers did not stop with mere advocacy of technical innovation; they endorsed, and even helped draft, some of the earliest legislation passed against the smoke nuisance. In St. Louis, members of the Engineers’ Club played a key role in writing the city ordinance passed in 1893. A year earlier, in response to agitation from the Ladies’ Health Association of Allegheny County, the Engineers’ Society of Western Pennsylvania formed a committee to investigate the smoke problem and to lobby for the passage of a stronger ordinance. When the city council considered an even tougher ordinance in 1906, engineers played a key role in securing its passage. The local chapter of the National Association of Stationary Engineers endorsed the measure unanimously. In a public meeting called to consider the ordinance, engineers representing the United States Bureau of Mines and the Civic Club of Chicago spoke in favor of smoke control.

In addition to the women’s clubs and the engineers, civic groups took up the smoke question. Chambers of commerce and civic leagues established committees that dealt solely with smoke abatement. In some instances, these members of the civic elite joined the anti-smoke crusade for personal and immediate reasons, as was the case with the residents of Society Hill in Kansas City. Sometimes, their participation resulted from civic pride, as in St. Louis.
Here, urban rivalry between St. Louis and Chicago, plus the prospect of the Louisiana Exposition, helped galvanize the Civic League of St. Louis to work for smoke abatement.17

One of the more interesting cases was that of the Pittsburgh Chamber of Commerce. In 1898, Andrew Carnegie delivered a speech to the chamber, urging it to take up the issue of smoke control. Carnegie’s concern prompted the chamber to action. In the following year, the chamber created a Committee on Smoke Prevention; in its report, the committee argued that “there will always be found individuals who will insist that unless they are at liberty to make smoke at their pleasure, they will be ruined. Such protestations will have to be ignored.” It recommended legislation that would not become law for another twelve years. Even so, future presidents of the chamber continued to push for smoke abatement in Pittsburgh. In 1906, Henry D. W. English helped organize support for a stronger smoke control ordinance. “The question of the abatement of the smoke nuisance,” he argued, “is of as much importance as any that can come before the city for consideration. Lives of Pittsburghers are being destroyed.” In 1912, William Holmes Stevenson was one of the leaders in the formation of the Smoke and Dust Abatement League of Pittsburgh, an organization that institutionalized the various anti-smoke forces in the city.18

Other civic groups involved in the campaign against the smoke nuisance included the Civic Club of Allegheny County, the Cleveland Chamber of Commerce, the Civic League of St. Louis, the Citizens’ Smoke Abatement Association of St. Louis, the Optimists’ Club of Cincinnati, the Smoke Abatement League of Hamilton County, the Civic Club of Chicago, and the Chicago Association of Commerce. The Chicago Association produced one of the most significant works on smoke abatement, a comprehensive tome titled *Smoke Abatement and the Electricization of Railway Terminals*.19

Comprehensive studies were results, not causes. The cause that united all these organizations, in some manner, was an attempt to make their city “a clean, sunny and efficient” place “in which to live as well as in which to work.” As early as 1894, James Cox argued that the Citizens’ Association was an “organization designed to aid the trade as well as the salubrity of St. Louis.” And, in 1906, the Civic League complained that the smoke nuisance had cost the city $6.25 million. Both economic and civic pride were threatened by the smoke.20

Despite the fact that they played a key role in their cities’ anti-smoke crusades, these organizations were, for the most part, not so radical as the women’s groups. While the women approached the problem with a consumer consciousness, the various civic associations were producer-oriented, representing an agglomeration of interest groups (e.g., the chambers of commerce). It was these interest-group organizations that helped the various city councils formulate their smoke ordinances. They commanded the greatest power, but that influence was moderated by the fact that they were looking “to aid the trade as well as the salubrity” of their cities. While it was no surprise that the peak of their anti-pollution efforts coincided with various world’s fairs and expositions, the legislation they passed was often moderate, precisely because interest-group legislation brought certain trade-offs. A good example is the accomplishments of the Manufacturers’ Association of St. Louis in 1901. St. Louis residents had petitioned the state legislature to allow the city the right to pass smoke ordinances. Their ordinance of 1893 had been ruled unconstitutional as a violation of the state’s police power. Only the legislature, the court ruled, had the power to call smoke a “nuisance.” So the petition drive ensued. But, before the legislature passed the desired legislation, the Manufacturers’ Association pushed through the following amendment: “Provided, however, . . . it shall be a good defense if the person charged with the violation shall show that there is no known [way] the emission or discharge of dense smoke complained of in that proceeding could have been prevented.” Consequently, while the city could now pass a smoke ordinance, any inspector charged with enforcement of that ordinance would have to prove that the offenders could in fact have prevented that smoke with appliances at hand.21

Before the agitation for smoke abatement legislation, the courts had demonstrated a consistently soft line in dealing with polluters of the air. As late as 1906, the *Chicago Record-Herald* noted that a Justice Gibbons, who handled nearly all the smoke cases in the city, seemed to regard the $100 fine as “cruel and unusual punishment.” If he imposed it once or twice a year, he [thought he had been] a most stern judge.” His actions helped make Chicago’s mild laws “plausible weak.” But, since Gibbons was part of a legal tradition that favored big business and economic growth, he would naturally think that imposing a fine more than once a year was “cruel and unusual punishment.”22

Judges were hesitant to fine air polluters heavily because, in the nineteenth century, they did not want to hamper what J. Willard Hurst has called “the release of energy.” In and out of the courts, it was almost a commonplace notion that a young, burgeoning economy could expand only if those who were injured could not sue and collect damages in full measure. New law had to be constructed and the older common-law tradition swept aside. For example, the developing law of negligence drastically limited corporate liability. The case of *Ryan v. The New York Central Railroad* illustrated this point most...
dramatically. Careless negligence of an engine caused a fire to erupt in Syracuse, New York; the ensuing conflagration consumed the plaintiff’s residence, along with several other homes. Despite the fact that the railroad was fault, the court did not hold it liable. As one scholar noted, “the railroad in Ryan was not held liable primarily because the harm it caused was too great.”

The same held true in other liability cases. Courts transformed laws that once held owners responsible for accidents on their premises into such twisted doctrines as the “fellow-servant” rule. As a result, those who chose either to live in urban areas or to work at industrial jobs found life increasingly perversely and seemingly without redress. With the law on their side, corporations found it much easier to violate rights that had heretofore been guaranteed the community, including the right to breathe clean air.

To be sure, the right to breathe unpolluted air had been guaranteed by the laws of nuisance, but the weakening of negligence and liability law during this time almost certainly affected the court’s evaluation of nuisance law. Although research in this area has been sparse, it is apparent that negligence, liability, and nuisance law had similar histories. They had emerged during the evolution of Anglo-American common law, only to be changed, in some cases quite radically, by the impact of the Industrial Revolution. Because the law changed in response to industrialization, the changes began in Great Britain. Joel Franklin Brenner, who has recently investigated the impact of the Industrial Revolution on nuisance law in England, arrives at the following conclusions: (1) during the 1850s and 1860s a standard of care invaded the law of nuisance; (2) the courts applied such laws differently to factories than to private individuals; (3) the courts seldom applied nuisance law to quasi-public enterprises; and (4) the courts did not systematically prosecute public nuisances. Although the British by no means welcomed pollution, “the legislatures, the courts, and certain segments of the public [favored] industrialization, and they were not anxious to burden industry with damage actions.” As a result, certain manufacturers were given a “prescriptive” right to pollute the air.

This pattern of unwillingness “to burden industry with damage actions” carried over to American developments. Basically, the development was similar to the decision in Ryan v. The New York Central Railroad, except that the issue was nuisance, not negligence. When American nuisance law was hammered out in the late nineteenth century, the courts, in effect, told the people that even though their private property was “being invaded by this smoke . . . , we hold that ‘public policy’ is more important than private property.” As a result, in smoke nuisance cases, most judges began with the premise that factories were both “legal and necessary.”

It was neither legal nor necessary for factories to locate where they interfered with “the rights of others to the enjoyment of their possessions.” Therein lay the difficulty. The courts sought on the one hand to protect those rights and on the other hand to promote economic growth. In the process, they often expressed what would be the American equivalent to the British “standard of duty.” As the Minnesota Supreme Court ruled in the case of St. Paul v. Griffin, “The emission of dense smoke from smoke stacks is not necessarily a public nuisance; whether it is or not would have to depend on the locality and surroundings.”

This utilitarian notion was postulated most persuasively by Horace Gay Wood, a leading authority on late-nineteenth-century nuisance law. Wood noted that the proliferation of industrial establishments made it quite difficult to file suit against a particular firm. The problem was increasingly vivid for those who lived in large manufacturing cities at the turn of the century. Against whom does one press charges? Wood illustrated the problem with the hypothetical question: If he sets up shop in a manufacturing center like Pittsburgh, and that shop were to produce quantities of smoke that would elsewhere be considered a nuisance, “can my works be restrained as a nuisance?” His answer indicated that the British “standard of duty” had crossed the Atlantic. If it could be proved that his shop sufficiently increased the volume of smoke, then he should be liable. If not, “it cannot be claimed that I have infringed on the rights of others. . . . [U]nless the smoke, fumes or vapors sensibly increase, it cannot be said that anyone is injured or damaged thereby, and consequently, no right is violated.” Smoke was not a nuisance per se, in the eyes of the law. It violated no rights. It did not injure or damage anyone. This was the legal doctrine. The law made it virtually impossible to prosecute polluters.

The law of nuisance was not static, however. Just as the industrial revolution brought a change in tort law in mid-century, by the end of the century, the courts began to “acknowledge the existence of social costs.” Judges as well as juries began to look more sympathetically at the plaintiff. Doctrine constructed in the years just prior to the Civil War fell by the wayside. Symbols of this change was the discrediting of the “fellow-servant” doctrine and the enactment of workers’ compensation laws. Judges, as well as municipal and state legislatures, took a new look at the smoke problem. By 1912, nearly every major city had a smoke inspector, even though he may have had limited power. Little by little, the principle of regulation gained strength.

Despite the various legal and legislative impediments, by 1912 the interaction of women’s clubs, civic organizations, special interest groups, and engineering societies resulted in the first smoke abatement laws in nearly every major metropolitan area. In most cases, however, the ordinances were rather tame.
dramatically. Careless negligence of an engine caused a fire to erupt in Syracuse, New York; the ensuing conflagration consumed the plaintiff’s residence, along with several other homes. Despite the fact that the railroad was at fault, the court did not hold it liable. As one scholar noted, “the railroad in Ryan was not held liable primarily because the harm it caused was too great.”

The same held true in other liability cases. Courts transformed laws that once held owners responsible for accidents on their premises into such twisted doctrines as the “fellow-servant” rule. As a result, those who chose either to live in urban areas or to work at industrial jobs found life increasingly perverse and seemingly without redress. With the law on their side, corporations found it much easier to violate rights that had heretofore been guaranteed the community, including the right to breathe clean air.

To be sure, the right to breathe unpolluted air had been guaranteed by the laws of nuisance, but the weakening of negligence and liability law during this time almost certainly affected the court’s evaluation of nuisance law. Through research in this area has been sparse, it is apparent that negligence, liability, and nuisance law had similar histories. They had emerged during the evolution of Anglo-American common law, only to be changed, in some cases quite radically, by the impact of the Industrial Revolution. Because the law changed in response to industrialization, the changes began in Great Britain. Joel Franklin Brenner, who has recently investigated the impact of the Industrial Revolution on nuisance law in England, arrives at the following conclusions: (1) during the 1850s and 1860s a standard of care invaded the law of nuisance; (2) the courts applied such laws differently to factories than to private individuals; (3) the courts seldom applied nuisance law to public enterprises; and (4) the courts did not systematically prosecute public nuisances. Although the British by no means welcomed pollution, “the legislatures, the courts, and certain segments of the public (favored) industrialization, and they were not anxious to burden industry with damage actions.”

As a result, certain manufacturers were given a “prescriptive” right to pollute the air.

This pattern of unwillingness “to burden industry with damage actions” carried over to American developments. Basically, the development was similar to the decision in Ryan v. The New York Central Railroad, except that the issue was nuisance, not negligence. When American nuisance law was hammered out in the late nineteenth century, the courts, in effect, told the people that even though their private property was “being invaded by this smoke . . . . we hold that ‘public policy’ is more important than private property.” As a result, in smoke nuisance cases, most judges began with the premise that factories were both “legal and necessary.”

It was neither legal nor necessary for factories to locate where they interfered with “the rights of others to the enjoyment of their possessions.” The courts sought on the one hand to protect those rights and on the other hand to promote economic growth. In the process, they often expressed what would be the American equivalent to the British “standard of care.” As the Minnesota Supreme Court ruled in the case of St. Paul v. Griffin, “The emission of dense smoke from smoke stacks is not necessarily a public nuisance: whether it is or not would have to depend on the locality and surroundings.”

This utilitarian notion was postulated most persuasively by Horace Gay Wood, a leading authority on late-nineteenth-century nuisance law. Wood noted that the proliferation of industrial establishments made it quite difficult to file suit against a particular firm. The problem became increasingly vivid for those who lived in large manufacturing cities at the turn of the century. Against whom does one press charges? Wood illustrated the problem with the hypothetical question: If he set up shop in a manufacturing center like Pittsburgh, and that shop were to produce quantities of smoke that would elsewhere be considered a nuisance, “can my works be restrained as a nuisance?” His answer indicated that the British “standard of care” had crossed the Atlantic. If it could be proved that his shop sufficiently increased the volume of smoke, then he should be liable. If not, “it cannot be claimed that I have infringed on the rights of others. . . . [U]nless the smoke, fumes or vapors sensibly increase, it cannot be said that anyone is injured or damaged thereby, and consequently, no right is violated.” Smoke was not a nuisance per se, in the eyes of the law. It violated no rights. It did not injure or damage anyone. This was the legal doctrine. The law made it virtually impossible to prosecute polluters.

The law of nuisance was not static, however. Just as the industrial revolution brought a change in tort law in mid-century, by the end of the century, the courts began to “acknowledge the existence of social costs.” Judges as well as juries began to look more sympathetically at the plaintiff. Doctrine constructed in the years just prior to the Civil War fell by the wayside. Symbolically, this change was the discrediting of the “fellow-servant” doctrine and the enactment of workers’ compensation laws. Judges, as well as municipal and state legislatures, took a new look at the smoke problem. By 1912, nearly every major city had a smoke inspector, even though he may have had limited power. Little by little, the principle of regulation gained strength.

Despite the various legal and legislative impediments, by 1912 the interaction of women’s clubs, civic organizations, special interest groups, and engineering societies resulted in the first smoke abatement laws in nearly every major metropolitan area. In most cases, however, the ordinances were rather tame
and stiff fines were uncommon. To be sure, jurists and legislators, as well as some inspectors, recognized the social costs engendered by the smoke nuisance. But they also favored the material benefits of industrialization, and, while they believed industry should be regulated, they did not want to pursue a policy that would hamper economic growth. These views were evident in the press from time to time, particularly after a slowdown in the economy. Reflecting on the depression of the 1890s, the Chicago Inter-Ocean commented about the efforts of those who desired to drag smoke law violators into court: "Violating the smoke ordinance is no new thing in Chicago.... But the great majority of us do not mind it. We are rather pleased to keep up the smoke. It was cleaner in 1893-97, but not so healthy." In the aftermath of the Panic of 1907, the Pittsburgh Times observed:

This nuisance had only been too effectively abated for too long a time.... Many will be inclined to bear with the smoke more patiently henceforth, since it means so much to the community and to individuals--bread to the poor, education for the young, cheer for all! What a significant revelation of the complexity of our civilization that a cloud of smoke could mean so much!

This attitude was well expressed by Booth Tarkington, when he had the title of the city, Jim Sheridan, rebuff a committee of women who sought his aid in abating the nuisance. Sheridan responded that "[a] smoke's what brings your husbands' money home on Saturday nights.... You go home and ask your husbands what smoke put in their pockets out o' the payroll--and you'll come around here next time to get me to turn out more smoke instead o' chokin' it off."29

The equation of smoke with progress and the dilemma of trying to maintain a healthy physical environment while not curtailing economic growth caused many political leaders to move cautiously. Tom Johnson, the reform mayor of Cleveland, wondered whether or not to sign a smoke ordinance; while he had declared that "he would like to have the smoke nuisance abated," he "preferred to have factories with smoke than no factories at all." Mayor Julius Fleischmann of Cincinnati told the city's women's club that "to abate the smoke nuisance in Cincinnati would be to stop the manufactories."30

The quandary over how to reconcile smoke abatement with economic prosperity not only vexed the politicians but threatened to polarize the anti-smoke movement into two camps. Some saw smoke primarily as a threat to the physical environment, while others believed that smoke merely indicated wastefulness. Those who saw the smoke problem as a nuisance generally demanded strict enforcement of substantive ordinances. Those who equated smoke with unburned fuel generally advocated educating the offenders, coaxing them to clean their stacks. Those who favored prosecution advocated action that would clearly have gone beyond the policy that encouraged profits for economic expansion. Those who pursued a policy of education questioned the notion that smoke in and of itself meant progress, but they asserted that fuel economy, technical advances such as stokers and down-draft furnaces, and proper education of the firemen would eventually bring about economic gain. As a result, they argued, by educating the offenders, smoke inspectors and other engineers would cleanse the urban environment and at the same time help make their communities more prosperous.

The attitudes of smoke inspectors on the job clearly reflected the differences between those who advocated prosecution and those who recommended education of the polluters. One need only contrast the views of four inspectors: Frederick Upham Adams, John Schubert, E. P. Roberts, and John Henderson. In 1906 Brand Whitlock, mayor of Toledo, was searching for advice in order to frame an ordinance for his city. Adams, who had been smoke inspector of Chicago during the Carter Harrison administration, sent Whitlock the following advice: "The way to abate smoke is to abate it. I have to suggest three remedies. The first is to fine the violators. The second is to fine them again. The third is to keep on fining them until they are bankrupt or repentant." Meanwhile, John Schubert, who was smoke inspector in Chicago, observed that it had been his experience that educating the offenders accomplished little. "Leniency and the ready acceptance of excuses too often lead to procrastination and the creation of the belief that there is something weak about the ordinance and its enforcement." Roberts, on the other hand, put the issue in a different perspective: "Theoretically, [the inspector] should not act as a consulting engineer, practically [he] must... Abate the smoke, but do not 'bait' the smoker." Perhaps Pittsburgh's smoke inspector, John W. Henderson, delivered the classic statement on the education-oriented philosophy. Henderson argued that the best smoke abatement was "up-to-date" smoke abatement, one in "harmony with the best spirits of the time. This is an age of education, cooperation, efficiency and economy." What this position meant in practice was that the "strong arm and the 'Big Stick'" approach should be used sparingly and only against the "ignorant, selfish, lazy and wasteful."31

The debate over prosecution versus education of offenders even created a rift within the smoke abatement movement itself. A major struggle occurred in St. Louis in 1911 at a meeting of all interested smoke abatement organizations called by the Million Population Club. The meeting was advertised as an attempt to "bring together delegates from the various civic associations of St. Louis, that there be a mutual meeting of minds and some concrete ideas
be formed by which the smoke nuisance can be quickly and effectively abated along sane and conservative lines." After the group passed a resolution stating that "the smoke nuisance can more quickly and effectively be abated by education by prosecution in the courts and that prosecution in the courts should only be instituted when cooperative methods fail," the Women's Organization for Smoke Abatement left in disgust. The president of that organization, Mrs. Ernest R. Kroeger, denounced both the resolution and the organization as "milk and water." As the *St. Louis Republic* observed, the Million Population Club and its allies wanted to pursue a policy of education, but the women desired to "throw good, hard stones and plenty of them" at the offending businessmen.32

Women's groups had been in the vanguard of the smoke abatement movement, not only in St. Louis but practically everywhere. But, by the second decade of the twentieth century, the views expressed by inspectors Roberts and Henderson and the members of the Million Population Club of St. Louis were paramount because they presented less of a threat to the desire for growth. The education forces could claim that in the long run their interest in efficiency and fuel economy would enhance economic growth, not deter it. Likewise, engineers, because of their reputation for efficiency, grew in respectability, in some cases in awe, during the first two decades of the new century. Coincidentally, progressive reformers began to advance the notion that "experts" should run the various commissions that had been established to regulate the economy. As far as smoke abatement reform was concerned, this meant that engineers tended to become smoke inspectors, since only they had expertise in fuel economy. In practice, the smoke inspectors were not unlike many of the other agents: they became spokesmen for the businesses they were regulating, and they performed their duties in such a way as to enable the polluters to delay needed plant modifications.

Although the education-oriented philosophy of smoke abatement conformed to the overall development of regulation in the Progressive era, the forces of prosecution were not routed everywhere. For example, Charles Poethke, a Milwaukee smoke inspector, strenuously pursued violators in his city. In 1907, the editor of the *Industrial World* wrote: "The noticeable absence of smoke in the districts bristling with chimneys spoke well for the effective work in smoke suppression in Milwaukee—a city only twentieth in population, yet standing seventh in industrial output." Poethke headlined his annual summary for *Industrial World* in 1914, "Anti-Smoke Prosecutions in Milwaukee." By 1915, he was the chief not of a Bureau of Smoke Inspection but of Smoke Regulation but of a Bureau of Smoke Suppression. In fact, Poethke's depart-

The Battle for Clean Air

ment helped keep the number of smoky days in Milwaukee at a minimum until the beginning of World War I.33

The prosecution-oriented wing of the smoke abatement movement, far from being ineffectual, was the generating force that caused community leaders to realize the need for smoke ordinances. The Wednesday Club of St. Louis and the Ladies' Health Association of Pittsburgh played significant roles in obtaining the ordinances of 1892 and 1893. A radicalized chamber of commerce was in the forefront of the attempt to get a new ordinance into effect in Pittsburgh in 1906. The Women's Organization for Smoke Abatement helped to strengthen St. Louis' smoke law in 1911 and to turn out of office Edgar C. Parker, a man totally convinced that smoke abatement was an engineering problem, not a political one.34

To the more radical members of the movement smoke abatement was indeed a political issue. It was only when an aroused citizenry acted, they claimed, that positive change took place. Only when there was a massive petition drive in 1901 did the Missouri legislature enact a law enabling St. Louis to pass a constitutional smoke ordinance.35 Even though the Manufacturers' Association softened the legislation by lobbying through a favorable amendment, the law was a step forward. In Pittsburgh, in 1906, the city council passed a smoke ordinance only after clear evidence was presented that segments of the city were in an angry mood. The mayor scolded the council:

I don't know what their motives are and I don't care. The smoke
in Pittsburgh undoubtedly is a nuisance, and it not only
hurts the health, but destroys property and mars the city by shutting out God's sunlight, to which everybody, no matter what his rank or condition may be, is entitled.

The *Pittsburgh Sun* demanded of the council: "You have the power, given by us, to abate the smoke nuisance that is an injury and an imposition upon us. We hereby demand that this be done." The bill that eventually passed was relatively innocuous, but it did make smoke abatement a public responsibility.36

Public protest could help push through anti-smoke ordinances, but constant surveillance of possible violations was difficult to sustain by citizen pressure alone. St. Louisians, for example, were genuinely aroused in 1893, 1901, 1906-07, and 1911. Pittsburghers were similarly excited in 1892, 1899, 1906, and 1912. In the meantime, smoke laws went on the books and inspectors were hired to inspect, cajole, argue, and cooperate with the offenders, to acquaint them with fuel economy. As Arthur C. Hall wrote, when he succeeded Matthew Nelson as Cincinnati's smoke inspector, "The policy of the
The Battle for Clean Air

of Western Pennsylvania that he believed "thoroughly in education rather than coercion."40)

Perhaps the hollow victories for the smoke abatement movement were best symbolized by two research teams combing two of the most "plutonian" municipalities—Chicago and Pittsburgh. The research groups for the Chicago Association of Commerce and the Mellon Institute of Pittsburgh, staffed by a variety of experts, submitted reports giving the impression of progress in the battle against smoke, though the results were more long-range than immediate. Both studies took about five years to complete, and as Benjamin Linsky has noted, "The major effect of a study of circumstances in Chicago, and in many communities both earlier and later, was that of buying time for the polluters and the hesitant politicians."41

Despite the pleas of press and civic groups, the newer, more "up-to-date" philosophy not only gained ground—it grew bolder. Edgar Parker wrote that "smoke abatement was a problem for the Engineer and not the Legislator." Roberts, Henderson, and Hall, not Poethke, defined the parameters of action within the smoke inspection offices. Given the temper of the times, this was probably inevitable. Nevertheless, the shift to education, by the eve of World War I, saw the fulfillment of the warnings John Schubert had pronounced a decade earlier. The campaign of education had become institutionalized, and such modernization brought with it "evasion of the law," violators "escaping punishment for several years," and the profound belief among manufacturers "that there [was] something weak about the smoke ordinance and its enforcement."42

Although they argued over means, both those favoring education and those favoring prosecution wanted cleaner air. Both groups were upset when World War I crippled the smoke abatement campaign. The war enabled smokestacks to emit pollutants with even greater intensity, as their operators geared up for full productivity. The results of such rapid production seemed to bolster the old notion that smoke meant prosperity. During the war, the smoke-as-waste argument fell by the wayside. Although the Civic Club of Allegheny County in Pittsburgh sponsored a poster contest that said that the waste of precious fuel was tantamount to aiding the Kaiser, the smoke continued to pour forth. The number-of "smoky" days recorded by the weather bureau in Milwaukee jumped from 47 in 1916 to 212 in 1918. The war effort made no distinction between those cities where smokestack fueled had been prosecuted or where they had been "educated." As Secretary of the Interior Franklin B. Lane told Pittsburgh's bureau chief, J. W. Henderson, "war meant smoke and ... people should stand it in contributing their 'patriotic bit.'"43

Entry into the Great War dashed whatever chance there was for an immedi-
ate cleansing of the urban atmosphere, but the crusade for clean air was set aside only temporarily. Despite the fact that the war convinced many that smoke symbolized prosperity, and even victory, the women's groups, civic associations, and engineers were once again calling for smoke abatement by the early 1920s. In 1924, St. Louisians were rallying against the "Black Smoke Tax." Various engineering journals published occasional pieces addressing the problem. But, in the early twenties, protests were raised against the smoke nuisance less frequently than before.46

In the business era of the twenties, the prosecution forces were almost completely routed by the advocates of education. Advance in smoke abatement technology made this possible. However, inspectors like H. B. Meller in Pittsburgh and Raymond R. Tucker in St. Louis played a key role in the postwar developments. Meller, who succeeded Henderson as Pittsburgh's bureau chief, wrote as early as 1920 that "many of the men who were active opponents of [smoke abatement] . . . became warm supporters when they found that compliance . . . saved them money." Meller later began work on a smoke abatement project financed by the Works Progress Administration. When he died in 1936, Tucker completed the project—and by 1940 unveiled a "showcase" program of smoke elimination in St. Louis. This example impressed the remnant of the anti-smoke crusaders in Pittsburgh greatly, so much so that the city that had in the late thirties scrapped smoke elimination programs as wasteful began to emulate St. Louis. The irony was that once again war, this time World War II, predetermined Pittsburgh and other cities from engaging in a massive cleanup.47

Cities like Pittsburgh and St. Louis, which depended heavily on bituminous coal, conquered the smoke problem only with the technological advances of the thirties and forties. Other urban areas, such as Kansas City, saw their smoke problem disappear with the introduction of a new energy source—natural gas. The cleanup in all these cities indicated that the smoke nuisance was conquered not so much as a result of stricter controls but because of a technological breakthrough that placed a heavier emphasis on natural gas, diesel fuel, and electricity. All these new energy sources combined to replace the "black smoke nuisance" with less visible yet sometimes more irritating forms of pollution.48

The postwar developments led engineers like Tucker, who studied the anti-pollution crusades before World War I, to comment on their futility and naiveté. Tucker was amused by the fact that the earlier crusaders believed that they could legislate pollution out of existence. E. G. Halliday was mystified by the engineers of that time actually believed that "if smoke were to be heated to a sufficiently high temperature, it would be consumed." But these critics

The Battle for Clean Air

forgot that those interested in abating smoke were utilizing available engineering theories and that those who felt that smoke should be legislated out of existence believed that it could be done. From the sophisticated engineering perspective of the 1940s, the early smoke abatement campaigns were certainly futile and naive.49

The smoke abatement crusades were futile during the Progressive era, however, precisely because the proponents of clean air were limited in their options. They constantly encountered a pro-growth mentality that reinforced the idea that smoke was a sign of prosperity. Especially after the Panic of 1907, opponents of prosecution argued that smoke meant jobs, prosperity, and progress. Such notions would not soon be dispelled and were in fact reinforced by the preparations for World War I. Nevertheless, these seemingly futile efforts to cleanse the urban atmosphere in the Progressive era were a starting point and thus merit the attention of students of anti-pollution politics.

Notes

2. St. Louis Globe-Democrat, 17 November 1906 [emphasis added].
5. See, for example, the St. Louis Globe-Democrat, 28 May 1905; the Pittsburgh Dispatch, 29 October 1906; and the Pittsburgh Times, 16 June 1906.
7. Stoner, "Ill Effects of Smoke," p. 373; Chicago Examiner, 11 February 1909; Dr. Charles A. L. Reed, "An Address on the Smoke Problem," delivered before the Women's Club of Cincinnati, 24 April 1905, p. 3; Milwaukee Sentinel, 10 November 1903.
8. See Medical News 14 (January 1914); St. Louis Post-Dispatch, 22 January 1893; Cleveland Press, 13 April 1904; Milwaukee Sentinel, 10 November 1903.
10. Civic League of St. Louis, Report of the Committee on the Smoke Nuisance, 1906, p. 5; Cleveland Leader, 2 March 1904; Allegheny Construction, 14 April 1906.
The Battle for Clean Air

Tarkington, The Tugboat, pp. 16-17.

30. Cleveland Plain Dealer, 3 December 1902; Cincinnati Enquirer, 20 December 1904.

32. St. Louis Post-Dispatch, 15 May 1911; St. Louis Republic, 17 May 1911.
33. See George Rooder, "Milwaukee Smoke: Problem and Response" (seminar paper, University of Wisconsin, 1970); Industrial World 48 (2 February 1914): 140; Steel and Iron 49 (15 February 1915).
35. See the petition to the General Assembly of Missouri concerning Senate Bill 204, manuscript collection, the State Historical Society of Missouri, Columbia, Missouri.
36. Pittsburgh Press, 23 October 1916; Pittsburgh Sun, 10 November 1916.
39. St. Louis Republic, 9 February 1911; St. Louis Post-Dispatch, 12 July 1911.
41. Chicago Association of Commerce, Smoke Abatement, with an appendix by Benjamin Lipsey, p. iii.
42. Chicago Record-Herald, 29 June 1906.
43. The posters are in the Monthly Bulletin of the Civic Club of Allegheny County, 18 April 1918. Statistics from weather bureau observation forms from Milwaukee in 1916 and 1918. For a fuller elaboration of the effect the war had on the number of smoky days not only in Milwaukee, but also in St. Louis and Pittsburgh, see R. Dale Grindel, "The Anti-Smoke Crusades: Early Attempts to Reform the Urban Environment" (Ph.D. diss., University of Missouri-Columbia, 1973). Pittsburgh Post, 15 July 1917.
44. Chamber of Commerce of St. Louis, Committee on Smoke Regulation, Smoke Problem Not a Modern or Social One (St. Louis, 1924), p. 1.
46. John M. Cox, "Smoke Abatement in Kansas City" (seminar paper, University of Kansas, 1977).