FROM INSURGENCY TO EFFICIENCY:
THE SMOKE ABATEMENT CAMPAIGN IN PITTSBURGH
BEFORE WORLD WAR I

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In June 1906, Pittsburgh councilman Corwin D. Tilbury introduced to his fellow lawmakers a proposal to create the post of city smoke inspector. It was a fairly innocuous proposal. Prosecutions of violators would be limited, and the smoke inspector would do just that — inspect smoke. And yet Tilbury’s measure met with defeat. The measure, however, captured the essence of Pittsburgh’s smoke abatement movement that had begun in the 1890s and did not die until America’s participation in World War I in 1917-1918. On the one hand, Tilbury’s proposal attracted the support of the insurgent-minded reform elite, people led by the Civic Club of Allegheny County and the Chamber of Commerce who had been active in the movement for over a decade. On the other hand, it attracted an “engineering elite,” efficiency experts who had been responsible for the passage of similar antismoke ordinances in cities such as Chicago, St. Louis, and Indianapolis, and whose work in Pittsburgh’s progressive era smoke abatement crusades culminated both in the establishment of an inspector’s office and in the emergence of Pittsburgh’s Smoke and Dust Abatement League. Both the inspector and the league showed a greater interest in “efficient” smoke abatement than had the more insurgent groups of the 1890s. Yet, in 1906, both groups were united in the effort to pass Tilbury’s proposal.

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Much the same as any other group organized for a specific reform, Pittsburgh's smoke abatement coalition was, at best, fragile, largely because the two major factions in that coalition came to view the problem from differing perspectives. Those who had been in the vanguard since the 1890s were concerned with such things as health and beauty while the engineers argued that smoke was an evil that was wasteful and therefore costly. The appeal to efficiency was already beginning to overtake the appeal to aesthetic and domestic concerns by 1906. However, this appeal to efficiency was not to become paramount until the teens; it was, as we shall see, even used in the effort against smokestacks during World War I. All this is not to say, however, that there were two distinct groups battling to dominate Pittsburgh's antismoke crusade. It simply meant that in this case, the reform elite showed a marked conversion from the insurgeney of the 1890s to a standard of efficiency by the prewar years. For the most part the leadership remained unchanged. Only the message differed. And in the public debate over the Tilbury bill this shift is most evident. There was still concern over the health and safety of the city's residents, but even in this debate many of Pittsburgh's smoke abatement advocates stressed an analysis of the problem based on efficiency and the calculation of costs.

For some time, Pittsburgh had distinguished itself as the "smoky city," and as early as 1880 the Engineers' Society had discussed papers dealing with the smoke problem. Yet the real impetus for smoke control came after a period when the city had been virtually freed from smoke. Between 1884 and 1890, market fluctuations caused by nearby discoveries of natural gas enabled Pittsburgh manufacturers to switch from coal to natural gas as their chief source of fuel. During those years, the consumption of coal dropped from around three million tons annually to less than a million. As a result, when Pittsburgh resumed its large-scale consumption of coal, the residents of the city were quick to perceive what a relatively clean city Pittsburgh had been. Many likewise realized the potentially deleterious effects of the use of coal. As one resident observed, "We are going back to the smoke. We have had four or five years of wonderful cleanliness in Pittsburgh. . . . We all felt better, we all

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1 Civic Club of Allegheny County, "Smoke" (Manuscript in Civic Club File on Smoke and Smoke Control, Pittsburgh, n.d.), 1.
looked better, we all were better. But now we are going back into the smoke. . . .”

Such protest was bound to occur. It had happened elsewhere. In St. Louis, for example, the city council had passed a smoke control ordinance in 1893, only to have it struck down by the state supreme court four years later. In St. Louis, one engineer estimated that the ordinance had wiped out three-quarters of that city’s smoke. By 1901, St. Louisans were engaged in a full-scale petition campaign to get the state legislature to pass a law that would enable St. Louis to go after the smokestacks once again. In Pittsburgh, the Ladies’ Health Association took up the issue. The ladies’ cause was aided by the Engineers’ Society of Western Pennsylvania, which in 1892 established a Committee on Smoke Prevention. In November of that year, this committee made several recommendations: that the Ladies’ Health Association continue its “campaign of education” on the smoke question; that the city councils pass an ordinance with adequate enforcement provisions; and that the building inspectors be allowed to regulate future boiler capacities.

The Engineers’ Society urged the city fathers to pass a bill with some teeth in it. The councils had already passed an ordinance earlier in the year, but the 1892 smoke ordinance dealt only with the East End. The South Side, for example, where most of the factories were, went unregulated. It had become apparent that the businessmen and the city fathers in the “smoky city” were on the same track. In the issue of smoke abatement, Pittsburgh’s businessmen apparently retained much influence. Although the council strengthened the anti-smoke ordinances in 1895 and 1906, many businessmen dragged their feet. In 1895, the Pittsburgh Leader hinted that the smoke ordinance was nothing but a smoke screen for a gas franchise monopoly. And during the debate over the Tilbury bill in 1906, the Pittsburgh Post responded to the council’s hesitation: “Those who resort to dilatory tactics will lay themselves open to the suspicion of choosing to serve

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3 Engineers’ Society of Western Pennsylvania, Pittsburgh, Proceedings 8 (Feb. 1892): 43.
4 William H. Bryan, open letter to the St. Louis Manufacturer, Apr. 28, 1899, as related to the Optimist Club of Cincinnati in an address, “The Problem of Smoke Abatement,” May 20, 1899 (Cincinnati, 1899), 25. See also St. Louis Post-Dispatch, Nov. 17, 1897.
5 St. Louis Globe-Democrat, Mar. 15, 1901.
8 Pittsburgh Dispatch, May 17, 1895.
the special interests instead of those of the community generally. There has been too much of this sort of thing in our law-making body.”  

Despite the adherence of many to special interests, the great debate over the smoke nuisance focused on the “public interest.” All sides keyed their interests toward civic pride and the benefits their program would bring to the community. One supporter of smoke control wrote in 1895 that “the grime and the soot was an incubus to all advancement. . . . 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 and defiled.”  

But in the city known as “the hearth of America,” smoke meant jobs. This became painfully evident to the editor of the Times in the year following the panic of 1907. “Many will be inclined,” he wrote, “to bear more patiently with smoke henceforth, since it means so much to the community and its individuals — bread to the poor, education for the young, cheer for all!”  

Nevertheless, there were some businessmen who profoundly believed the smoke nuisance unnecessary. Chief among them was Pittsburgh’s most noted entrepreneur, Andrew Carnegie. Carnegie told the Chamber of Commerce in 1898 that he believed the smoke should go and that someone should be creative enough to deal with the problem. “Is there no Westinghouse or Brashear among us,” he asked, “to work the miracle of our salvation from this nuisance? . . . If I were czar of Pittsburgh, . . . I should call together a commission of Pittsburgh’s able well-known citizens. . . . I should say to that committee: Consult the experts.”  

Carnegie’s advocacy of smoke abatement was important for a couple of reasons. First, his support led fellow magnates to attempt to work toward smoke control. George Westinghouse and Henry Clay Frick, for example, toyed with an idea of General Adoniram H. Warner that would have constructed a massive power plant near Washington (Pennsylvania) serving Pittsburgh, Wheeling, and other nearby communities. But even more important, Carnegie gal-

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9 Pittsburgh Post, Oct. 12, 1906.
10 Pittsburgh Times, May 16, 1895.
13 Pittsburgh, Chamber of Commerce, Yearbook 1899, speech by Andrew Carnegie, Nov. 10, 1898, 95-97.
14 Cleveland Plain Dealer, Sept. 22, 1905.
vanized the Pittsburgh Chamber of Commerce itself into action. In 1899, the chamber's Committee on Smoke Prevention 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." The committee also recommended far-reaching legislative action which would not be passed in Pennsylvania for another twelve years. Even so, future presidents of the chamber continued to labor for smoke abatement in Pittsburgh. In 1906, Henry D. W. English helped to organize the supporters of the Tilbury bill. "The question of the abatement of the smoke nuisance," English argued, "is of as much importance as any that can ever come before the city for consideration. Lives of Pittsburghers are being destroyed." In 1912, William Holmes Stevenson, president of the Chamber of Commerce, was one of the prime movers in the formation of the Smoke and Dust Abatement League, a group representing organizations as diverse as the fashionable Twentieth Century Club and the Pittsburgh Industrial Development Commission. The league carried on in the tradition of the chamber itself, asserting that fuel could be burned without smoke. Thus a considerable number of business leaders were in the vanguard of those who advocated fuel economy and who maintained that smoke meant waste — a seemingly unusual stand in the "hearth of America."

Had the chamber, the Engineers' Society, and the Ladies' Health Association held the monopoly on the idea of what smoke meant to Pittsburgh, it would not have taken nearly two decades to get an effective ordinance on the books in the city. There were, as we have seen, special interests at work. For every Carnegie who seemed genuinely interested in smoke abatement there were "individuals who [insisted] that unless they were at liberty to make smoke, they [would] be ruined." Such was the case with Charles Lockhart, owner of a McKees Rocks iron and steel works, whose superintendent, Samuel Poster, sat on the city's Select Council, helping to defeat Tilbury's measure. Allied with those who opposed smoke abatement for personal reasons were those who resisted the reform because it was part of a comprehensive package coming down from a reform mayor who had bucked the machine. Many felt enmity toward George W. Guthrie, former vice-president of the Dollar Savings Bank, former

17 Pittsburgh Gazette-Times, Dec. 16, 1912.
mayoral candidate of the National Municipal League in 1897, and in 1906, mayor of Pittsburgh.\textsuperscript{18}

But more important than the obstructionism of certain well-placed businessmen and the political opposition of the mayor’s opponents — all the more irritating because it transcended the particular issue of the Tilbury bill — was the idea that smoke was beneficial and represented a sign of progress. Perhaps this was an incorrect perception, but it was a difficult one to shake loose, especially in the “smoky city.” As we have seen, while some newspapers condemned the “dilatory tactics” of those opposed to smoke abatement in 1906, others, after the panic of 1907 had made its mark, sighed that smoke meant jobs, education, and cheer. Although these remarks were made in the heat of economic recovery after the panic, they stated explicitly what many had thought all along about the relationship between smoke and prosperity.

Amid the hurly-burly of partisan politics, the division of the business community itself over smoke control, and the larger rift within the Pittsburgh community over what smoke really symbolized, Corwin Tilbury introduced his resolution to rationalize the abatement of smoke. The city councils had not acted positively on the matter since 1902 when the Pennsylvania Supreme Court had struck down the ordinance of 1895 as discriminatory. And although Tilbury’s own measure was thwarted by those opposed to Mayor Guthrie and any programs associated with him, the commotion that its demise caused led to a compromise measure known as the Weber bill, passed in December 1906, which was likewise struck down by the state supreme court in 1911. That the supreme court found this law unconstitutional is not the important issue here; that civic groups raised a ruckus over the shelving of Tilbury’s proposal is.

By all accounts, Corwin Tilbury was an obscure councilman whose impact on Pittsburgh’s politics was not great. So it was probably only natural that Tilbury sought the advice of the new mayor on his smoke proposal. Guthrie liked the measure, but apparently thought it might be more easily passed if divided in two: one part a bill to prohibit the smoke nuisance, and the other a measure to establish the machinery for its enforcement. Here the mayor was badly mistaken. After the bills were drafted and sent to the Select Council, the mayor’s political opponents determined their

\textsuperscript{18} History of Pittsburgh and Environs, 5 vols. (New York, 1922), 3: 847-51.
fate. The council sent the operative ordinance to its health and sanitation committee. This should have told both Tilbury and the mayor what to expect from the council by way of cooperation on this issue. The Committee on Health and Sanitation had been created three years earlier, but Tilbury's measure was the first proposal ever brought before it. Furthermore, the committee seemed disinterested in the bill, twice failing to obtain the necessary quorum to listen to Tilbury discuss the bill. Finally, on the third try, the quorum — thirteen of the twenty-four members — considered the measure, passed it, and sent it to the Select Council itself.19

Although the committee hearing had shown how innocuous his proposal really was (the measure was worded so that inspectors would not bring charges against "makers of the smoke" who were "doing the best they [could]" to clean up their stacks), Tilbury's measure was in trouble in the Select Council from the start.20 On October 8, after Tilbury had assured the group that both the mayor and the city solicitor had examined the bill, Dr. William H. Weber moved that the council secure a written opinion from the solicitor. Tilbury objected, but Weber's motion passed. The action effectively stalled the smoke bill.21

The reaction of Mayor Guthrie was sheer fury: "It is not the dot of an 'i' or the cross of a 't' that people care about in an anti-smoke ordinance. What the public desires is a law that will abate the smoke nuisance. Councils quibbled over the details of the wording and then refused to pass it. Undoubtedly a law can be made that will hold against the onslaught of the courts. The people want the smoke abated. There is a cry from all over the city, and something will have to be done by Councils." 22

Meanwhile, a local chapter of the National Association of Stationary Engineers considered the Tilbury proposal with less emotion than the mayor. For these engineers, it was not a matter of popular support from all over the city; for the engineers, it was enough that the measure was practical, and as such, deserving of support. Though not imbued with the mayor's rhetoric, the engineers proved an important element in the coalition against the smoke


20 *Pittsburgh Dispatch*, date illegible, in Cleveland Scrapbook Collection on the Smoke Problem, Cleveland Public Library, 118, pagination mine.

21 *Pittsburgh Post*, Oct. 9, 1906.

menace in the city of Pittsburgh.21

Even so, the Select Council went even farther toward burying the bill. At its October 22 meeting, the body thwarted discussion of Tilbury’s measure when its president, Dr. E. R. Walters, and a group of anti-Guthrie councilmen called by its opponents the “combine” smothered debate by imposition of gag rule. Furthermore, this group voted to pass Dr. Weber’s motion to table discussion of the bill indefinitely. But the fight against passage of Tilbury’s bill was largely incidental. The man to beat was Mayor Guthrie, and since members of the combine saw Tilbury often voting for issues supported by the mayor, Tilbury was to be punished. His bill was not to become law unless he weaned himself away from the mayor’s men and the reform wing of the council. This he refused to do. As one member of council’s reform wing, William H. Stevenson, pointed out, Dr. Walters choked off debate over the Tilbury measure by refusing to allow supporters of the Tilbury bill to speak.24

The mayor scolded the members of the combine: “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 impairs 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.” 25

Guthrie went on to suggest that the civic organizations of Pittsburgh attempt to use their influence to bring about a thorough consideration of Tilbury’s proposal. The Civic Club, the Board of Trade, and the Chamber of Commerce all responded vigorously. The first two groups promised to be watchdogs at the next council meeting, and the chamber made its headquarters available for a mass meeting that same afternoon. The chamber’s president, Henry D. W. English, who had generally worked with the mayor on many of his reform proposals, spoke at the meeting of the significance of resistance to the bill: “Lives of Pittsburghers are being destroyed, the lot of the working man made harder.” Julian Kennedy, president of the Engineers’ Society, struck a more practical note. He informed the gathering of his belief that if the correct ordinance were passed, Pittsburgh would be free of 90 percent of its smoke within four months.26

The throng marched to city hall to await the council’s action after the chamber had voted unanimously to pass a resolution favoring

23 Pittsburgh Sun, Oct. 15, 1906.
26 Pittsburgh Post, Oct. 27, 29, 30, 1906.
the Tilbury measure. One of those on council who had favored Weber's action to table the Tilbury bill, T. J. Hawkins, was now persuaded to move for reconsideration (and presumably discussion). The people assembled expected an interesting evening, hoping that the several engineers they had brought with them might enlighten the council members. But the council members apparently did not seek enlightenment, for no sooner had Hawkins moved to reconsider and was seconded than the council voted down the measure without discussion, twenty-three to twelve.27

This swift action enraged the onlookers. One of the spectators called out loudly: "Let us hold an indignation meeting; the people should not stand for this." Such anger prompted Councilman P. F. Toole to respond, "Well, go outside and hold it." But so strong was the public sentiment that even the councilmen knew that they would have to do something more than hurl epithets at the crowd. They knew that they would have to appease the crowd in some way.

At first, the council attempted to reconsider the motion to reconsider. While this was highly irregular — and perhaps even violated council procedural rules — the motion passed by a vote of twenty to eleven, with members of the combine joining supporters of the smoke ordinance. But then the council put together a five-man committee to work out a completely new bill. Because Pittsburghers could not reconsider the Tilbury measure before 1908, when a new council would be elected, even those opposed to the Tilbury bill (as such) joined the new committee. It included two outspoken supporters of smoke abatement (Tilbury and Charles Cavett) and the two who had led the fight to oppose the bill (Weber and Samuel Poster). As Weber pointed out in proclaiming the death of the Tilbury bill: "A new anti-smoke ordinance will be prepared and introduced at the next meeting of Councils. It will not be the Tilbury ordinance, nor will it be known as the Tilbury ordinance. The Tilbury ordinance is legally dead." 28

At the initial meeting of this special committee it became apparent that the reformers had had some effect on the committee's work as a whole. The committee elected Charles Cavett, a supporter of Tilbury's ordinance, as president. And Council President Walters succeeded in outmaneuvering Dr. Weber by pressing for a public meeting during which councils would discuss the matter. The committee then sent out invitations to all interested parties and scheduled the meeting for

the afternoon of November 9. The committee likewise invited experts from other cities. All civic organizations, as well as the Engineers’ Society and the National Association of Stationary Engineers, were represented. Although the strength of the antismoke movement had made its mark, the insurgents would find themselves more than balanced by forces espousing efficiency. This symbolized what would become of the antismoke crusade in Pittsburgh during the next decade and a half. However, for now, it appeared that the movement had overwhelmed the opposition.29

In all, five hundred invitations went out, mostly to the city’s prominent citizens. But others attended, too; as the Pittsburgh Sun noted, “many citizens of the municipality . . . choked the doorways and jammed the passageways, and made the visitors’ railing creak with protest.” 30 While the Sun paid great attention to the moblike crowd that jammed the chamber that afternoon, the speakers were primarily engineers and manufacturers. Chief among these “experts” were Professor John A. Holmes and Dwight T. Randall, both government engineers, and Robert H. Kuss, engineer for the Civic Club in Chicago. These experts attempted to show that it was not a costly sacrifice for manufacturers to abate the smoke. In short, they preached fuel economy, emphasizing the doctrine that fuel was wasted when smoke went up the stacks — an unnecessary cost both for the manufacturer and the city.

The most telling arguments against the “necessity” of the smoke menace came from manufacturers. John Z. Speer, for forty years engaged in business at the Schoenberger mill, asserted that it had often been demonstrated in Pittsburgh that smoke abatement was not costly. He informed Councilman Weber that he could resolve the problem of puddling and heating furnaces by making more space available for the furnaces, or if the furnaces were too crowded together, by rearranging them. Isaac W. Frank, president of the United Engineering and Foundry Company, argued that everybody ought to have the civic pride to stop the smoke, especially when it meant simply exercising a little intelligence and realizing that it paid. “As a manufacturer of thirty years’ standing in the community,” Frank maintained, “I can say that smoke abatement pays.” Finally, W. C. Reitz, of Pittsburgh Steel, observed: “There is no smoke ordinance in Monessen, so when we started to eliminate smoke in that

29 Pittsburgh Post, Nov. 3, 1906.
30 Pittsburgh Sun, Nov. 10, 1906.
town, it was a business proposition. We wanted to see if it paid. It does pay. We have increased the efficiency of the plant. It doesn't cost so much to operate it. We get more power out of the same amount of coal. If it pays to abate smoke in Monessen, it will pay in Pittsburgh, and if it can be done in Monessen, it can be done in Pittsburgh."

Many of the newspapers concentrated on the speech by Miss Kate McKnight. Since 1892, she had been part of the more militant anti-smoke movement. Although the Post contended that Miss McKnight had approached the subject from a different angle, the president of Pittsburgh's women's clubs likewise addressed herself to costs inflicted by the smoke. Perhaps she considered them social costs, but they could nevertheless be calculated. She chastised those who fought smoke abatement because it would cost them money. Was the smoke any more beneficial than the costs the community had to endure? These costs borne by the community were both direct and indirect. She argued, for example, that many who made their fortune in town lived and spent their money elsewhere because Pittsburgh was too smoky. Despite Miss McKnight's reputation as one who fought smoke as a menace to the health of the city, it appeared as though she too agreed that the smoke nuisance was a menace because it was costly and inefficient. She said little that was substantively different from the positions of the Chamber of Commerce and others.32

In short, whether engineers, manufacturers, or civic leaders spoke before the gathering, they based their arguments on the theme of fuel economy and that the production of smoke was inefficient, wasteful, and ignorant. Pittsburgh seemed determined to handle this nuisance like a good business town. There would be no call for the preindustrial community. There would be little open talk about the medical and biological hazards of smoke. In that meeting, the tone was set for the efficiency rage of the next decade. Yet even then, some still viewed insurgency as a vehicle for reform. As the Sun put it to the council: "You have the power, given by us, to abate the smoke nuisance that is an injury and imposition on us. We hereby demand that this be done. . . ."

After the mass meeting, the committee adjourned until the following Tuesday. But council members had turned around. Tilbury himself was optimistic, acknowledging that "things look favorable for the obtaining of a smoke ordinance in Pittsburgh. I am willing

31 Pittsburgh Post, Nov. 10, 1906.
32 Ibid.
33 Pittsburgh Sun, Nov. 10, 1906.
to help in every way toward getting such a law, no matter who is responsible for it." 34 Even Weber and Poster had become warm advocates of an ordinance; they needed no further convincing at the next meeting. As a result, at that meeting the special committee selected a subcommittee of three to amend the Tilbury ordinance or draft a substitute.

Passed in December, the smoke abatement bill contained a defense clause that had been suggested by the government engineer, Professor John Holmes, to Dr. Weber. The clause was similar to that which the St. Louis Manufacturers Association had lobbied through the Missouri legislature in 1901. It eased the fears of many manufacturing interests who had misinterpreted Tilbury's measure from the very beginning. While Tilbury had stressed that his bill was an attempt to get around the problem of discrimination that had been raised by the state supreme court's decision of 1902, in no way did he foresee vigorous enforcement resulting from his bill. Indeed, that was one reason why he personally lobbied in behalf of a Pittsburgh Smoke Abatement League, which he hoped would keep the smoke inspector alert to violations. 35

Thus a liberalized ordinance passed the Select Council in December 1906. This same body, which had stalled and delayed the bill's consideration during the summer and early fall, now passed an ordinance in a matter of weeks. Ironically, it had been these stalling tactics that had generated the wrath of the public, more specifically that of the mayor, the Chamber of Commerce, and other civic associations. It was largely through the pressure of these groups massing together, first at the council meeting itself, then at the "indignation" rally outside, and finally at the special session called by Dr. Walters, that these disparate groups were able to pressure certain members of the combine to come around to their point of view. Admittedly, some councilmen were angered, as was P. F. Toole, when they heard members of the Chamber of Commerce calling them "cattle." 36 Yet this fear and anger led to a desperate attempt to reconsider the smoke abatement bill, the creation of the special committee of five, the discussion of an ordinance in an open forum, and eventually a compromise. Here was consummate evidence that insurgency (in this case, outright indignation) brought results. And yet, during the

34 Ibid.
35 Pittsburgh Post, Nov. 10, 1906; see also St. Louis Republic, Mar. 14, 1901, and St. Louis Globe-Democrat, Mar. 15, 1901.
debate, many in Pittsburgh's antismoke movement leaned away from insurgency toward the more refined position taken by experts in search of efficiency.

The compromise that Pittsburgh's Select Council had worked out in 1906 established a Bureau of Smoke Regulation. Symbolically, this was a victory for the more professional members of the insurgent reform elite. There was now an officer of the city government whose sole responsibility was to regulate smoke emissions; engineers and contractors now had a person to "see" in city hall. Before the office was shut down in 1911 when the supreme court overturned the ordinance in the case of the Commonwealth of Pennsylvania v. Standard Ice Company, the Pittsburgh Bureau of Smoke Regulation under Joseph W. Searle and J. W. Henderson, gained a reputation for professionalism and advanced expertise. The International Association for the Prevention of Smoke, an organization of city smoke inspectors, elected Searle as its president in 1913.37 And Henderson made a valiant attempt to make smoke abatement more efficient. Publicity gave him confidence that victory over Pittsburgh's smoke problem was possible. In a speech to his fellow smoke inspectors, Henderson, arguing for "up-to-date" smoke inspection, emphasized that all smoke inspectors should realize that they were living in "an age of education, cooperation, efficiency and economy," when "the Big Stick" would be used sparingly if at all. Moral suasion would be the chief weapon in the struggle, relied on to convince the offenders of their errors. Surely, if they could not see their wrongdoing from a "public interest" viewpoint, then they would most certainly understand that something costing less would be better.38 But Henderson's charts and graphs could not hide the fact that smoke was on the rise as the city prepared for World War I.

Henderson's public relations campaign convinced many that moral suasion rather than indignation and discussion instead of legislation would solve the smoke problem. But tied to this whole theme was an equally important point: between 1892 and 1918, Pittsburghers who were against the smoke nuisance shifted from their original idea — that it was an affront to be dealt with like other nuisances — to the position that smoke was wasteful, costly, and inefficient, but not something to get indignant about. Henderson's efforts helped further

37 Industrial World (Pittsburgh) 48 (Feb. 2, 1914): 131; Pittsburgh Post, Sept. 13, 1913.
to undermine the position held by advocates of insurgent action. In various ways, then, the efficiency argument gained, and those who still saw the smoke problem as fiendish had to alter their public statements about the problem in order even to enter the discussion.

So it was that when William H. Stevenson formed the Smoke and Dust Abatement League in December 1912, the various organizations that became involved in the smoke abatement crusade spoke a very different language than they had in the 1890s or even 1906. Gone was the indignation which led the ladies to take their case to the Engineers' Society in 1892. Gone was the fire of the chamber's own committee report that "protestations [on the part of smoke makers] will have to be ignored." Gone, too, was the zeal which led Mayor Guthrie to counter those who opposed Tilbury's measure by saying, "The smoke in Pittsburgh . . . not only impairs the health but destroys property and mars the city by shutting out God's sunlight, to which everybody . . . is entitled."

Instead, the Smoke and Dust Abatement League talked in terms of making the bureau more efficient. Efficiency became the principal objective in smoke control as well as in most other fields. Both the inspector — in this case J. W. Henderson — and the Smoke and Dust Abatement League pursued a policy of persuasion and education. In one of its initial activities, the league held the first smoke abatement exhibition in North America, with its object to educate not only the fuel consumers, but the public in general. And then there was the league's ultimate triumph: a smoke abatement week in October 1916, when Pittsburghers were subjected to lectures and slide shows promoting true industrial efficiency. Members of the league hoped that the lectures and slide shows would achieve four goals: to show that it was possible to burn soft coal without smoke; to preach fuel economy to the manufacturers; to review the five years of the league's stewardship; and, finally, "to urge all citizens to persevere in demanding that Pittsburgh be made a clean, sunny and efficient city in which to live as well as in which to work." Some of the old rhetoric was still there, but so were efficiency, education, fuel economy, and lantern shows. Whatever zeal had been in the smoke abatement movement in Pittsburgh in 1906 seemed distant a decade later.19

One is tempted to say that the league, instead of combating the smoke nuisance, was promoting industrial efficiency. After all, was

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this not the reason why they sought a smoke inspector with better "credentials"? Moreover, many members of the Smoke and Dust Abatement League believed in the gospel of efficiency. In terms of the debate concerning proper methods of abating smoke, this meant moral suasion and the argument for greater fuel economy. Carried one step further, this necessarily involved the smoke inspector in the daily work of those he inspected, and it also enabled him to give them friendly advice. Therefore, although the league had placarded Pittsburgh with posters proclaiming "it can be done" and showing a clear view of the city's skyline, it was far more significant that the various civic and industrial groups were lectured to by men who adhered to the doctrine of gentle persuasion. The practice of cooperative action already outweighed the vestiges of insurgent rhetoric. Cooperative action meant a life free from confrontation — and with any luck, a city less smoky.

But the members of the Smoke and Dust Abatement League, as well as its most noted proponent in Pittsburgh, Inspector Henderson, soon discovered that cooperative action meant different things to different people, especially in wartime. Here was the ultimate irony: smoke abatement, which had become linked with "true industrial efficiency," found itself sacrificed to that ultimate god of efficiency, war. As Secretary of the Interior Franklin Lane wrote to Henderson: "the department was well aware of the economical features of smoke consuming devices, but war means smoke and . . . people should stand it in contributing their 'patriotic bit.'" 41

Assuredly, the league could stick to its argument that smoke abatement was a simple matter of fuel economy, and it did so, hinting that allowing smoke to go up the stack was tantamount to aiding the cause of the kaiser. The league even sponsored a poster contest attempting to strike a balance between fuel economy and patriotism. 42 But it was all to no avail. Smoke makers wrapped themselves in the mantle of the flag, cooperation faded, and the number of smoky days skyrocketed.

This should not leave us with a harsh analysis of Pittsburgh's campaign against smoke. Other cities had similar experiences. Milwaukee, the city that had maintained the best smoke elimination program prior to the war, saw its number of smoky days triple from 66

41 Ibid., July 15, 1917.
42 Posters exhibited in the Civic Club of Allegheny County, Monthly Bulletin, Apr. 18, 1918.
to 212 between 1917 and 1918.\footnote{43 U.S., Department of Agriculture, Weather Bureau, Form 1001, \textit{Original Monthly Record of Observations at Milwaukee, Wisconsin.}} Neither education nor confrontation worked during the war. However, Milwaukee likewise showed that a smoke elimination program worked better than a smoke regulation program — during peacetime. One suspects that the nature of Pittsburgh’s campaign, moving continuously from confrontation to cooperation and education, eroded whatever zeal there was behind Pittsburgh’s smoke abatement program. The enthusiasm which marked the confrontation over the Tilbury bill in 1906 could not be sustained by bureaucratic regulation and lantern shows. Preaching the gospel of true industrial efficiency simply was not as exciting as court action and indignation rallies. And, as we have seen, efficiency could cut both ways, particularly during war. It was one thing to argue that manufacturers sending smoke up their stacks were somehow German agents; it was quite another thing to get the goods and services to those who needed them for the war effort.

As it turned out, the war did more than delay the success of smoke control in Pittsburgh. Programs were scrapped even in the 1930s. Only after certain technological problems were solved, most notably by Raymond R. Tucker in St. Louis, did Pittsburghers once again move toward effective smoke control. After another delay caused by the industrial needs of World War II, smoke control was at last effected in the late forties. That these successes came so late, however, should not minimize the antismoke movement in Pittsburgh before World War I either as a study of urban reform movements in the progressive era or as a study in the politics of antipollution.