

Home Fires Burning: The London Fog of 1952 and the Movement to Clean Air



Emily Eckert
Barnard College, Department of History
Thesis Advisor: Professor Deborah Valenze
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Introduction

London was both the phenomenon and the place that made fog famous. Whether used as a veil to conceal crime in the stories of Sir Arthur Conan Doyle's *Sherlock Holmes*, as a symbol of urban gloom in the novels of Charles Dickens, or captured by artist Claude Monet in his paintings of the Thames, London fog was a recognizable element of British culture. While fog functioned as a device for scene setting in literature and art, it became legendary throughout much of the nineteenth and twentieth centuries as an inescapable part of city life. London's well-known fogs were gritty and yellowish, caused by the burning of sulfurous coal and the subsequent production of smoke that coupled with and stayed trapped in the atmospheric wetness of naturally occurring fogs. One particularly terrible fog descended on London for four days in December 1952. It settled over the city and prevented chimney smoke from rising and escaping while also keeping new air from coming in. The smoke from the millions of domestic coal fires remained trapped as the city continued to burn more fuel during those cold December days. Ultimately these conditions led to the deaths of thousands of people (possibly as many as 12,000) namely through the fatal exacerbation of respiratory conditions like asthma, bronchitis, and other lung conditions.

The London fog of 1952 was a catastrophic event, though it remains understated in the chronicling of British environmental history. One has likely never heard of it unless they recently watched Season 1 of Netflix's *The Crown*, which traces the life of Queen Elizabeth II starting from the 1940s. The episode titled "Act of God" covers the dense, crippling fog in a comprehensive manner, even touching on the government's reluctance to respond to the crisis in its immediate aftermath. In order to do justice to the severity of the fog, *The Crown*'s director Stephen Daldry chose not to rely on computer-generated special

effects, but instead he had the production company fill a great huge warehouse with fog.¹ Similarly, in a recent episode of the classic American television game show *Jeopardy*, an answer to a clue relating to London's deadly fog appeared in a category titled "Apocalypse Then." Considering the 1952 fog in this light, as an apocalyptic killer rather than something to be merely tolerated and endured, marks a shift in environmental thinking and societal perception. Though such a view is very much a part of our *current* narrative, Londoners in 1952 were slow to view their fog in such terms.

British historian Christine Corton meticulously captures the subject of London fog in *London Fog: The Biography* through a wealth of representations of fog in popular culture, literature, cartoons, and art history. Much of her work is grounded in the metaphorical and symbolic use of fog in literature. As an overall study of London's atmosphere, this source is very useful, yet her overall approach gives too much attention to fog fiction. Peter Brimblecombe's *The Big Smoke: A History of Air Pollution in London since Medieval Times* offers insight into smoke abatement movements and early attempts at legislation to curb air pollution. His engaging account of the social and economic development of air pollution controls provides helpful background for the legislative history of London's clean air. The story of air pollution in London leading up to the 1952 fog, the "Big Smoke," or the "Great London Smog" as it is often called today, is not just to be a biography of fog, however. It is a story of how London's fogs became inseparable from London's chimneys. The environmental danger of coal smoke from domestic chimneys went largely unrecognized, and popular individual complicity in the burning of domestic coal fires posed a strong obstacle for legislative regulation.

¹ Kate Samuelson, "Everything to Know about the Great Smog of 1952, as Seen on The Crown," *Time Magazine*, November 4, 2016.

This thesis aims to build off the existing scholarship by using Parliamentary debates in the decades before the 1952 fog and in the years after the disaster as the essential foundation in tracking the developments of environmental perspectives in London. In seeking to trace cultural assumptions of London's fog, this thesis relies particularly on newspaper articles from sources such as *The Daily Telegraph* and *The Manchester Guardian* to investigate the way the 1952 fog was reported and the change in public opinion that ensued. This thesis seeks to answer why Londoners tolerated sulfurous fogs for centuries, why they did not immediately view the 1952 fog as a crisis, and why the government's response to the disaster remained lackluster until a year after the incident.

Ultimately, Parliament passed the Clean Air Act of 1956 in response to the disaster, and it took the 1952 fog for Britain to not only make a change toward cleaner air but to change the perception of fog in the public mindset. London's general public did not perceive the 1952 fog as an immediate crisis—for most, it was part of the modus operandi of London life. Only when hospital records were made official and national statistics realized did a psychological shift take place. As the severity of the incident was grasped in the aftermath, a shift in collective consciousness became both conceptual and linguistic: London's historic fog became *smog*. The 1952 disaster was thus a critical juncture in which London's fog underwent a transformation in British cultural imagination.

Chapter I: Seeing through London's Problem with Fog

One of the earliest and most extensive denunciations of London's smoky atmosphere was by diarist John Evelyn, who presented his *Fumifugium: or the Inconvenience of the Aer and Smoake of London Dissipated* to Charles II in 1661. Evelyn suggested that the burning of sea coal shortened the lives of people living in London, and he regarded it as a "sullen" fuel that wreaked havoc on architecture, vegetation, and human health.² Evelyn brought attention to the general decline in health that came from a smoke-filled atmosphere, and he also sought to challenge and disrupt the ingrained societal idea that there could be no fire without smoke.³ He reasoned that the objectionable smoke was "not from the culinary fires, which for being weak, and lesse often fed below, is with such ease dispelled and scattered above."⁴ His treatise firmly blamed industry for London's smoke problem however, and saw a feasible solution in relocation, arguing to move smoke-producing works outside of the city.⁵ His document laid the groundwork for a debate on smoke that would continue for centuries, and though his argument placed the blame on the industrial side, it was critical in establishing the smoke problem as a *London* problem. Throughout the nineteenth century London fogs increased in both frequency and duration, and by the 1880s, there were on average sixty fogs a year.⁶ Journalistic benchmarking confirms that fogs consistently disrupted street/river traffic as well as the casual labor market, with midday close-downs becoming more commonplace.⁷ The fogs were so prevalent that journals like the *Builder* in 1859 complained that Londoners

² Peter Brimblecombe, *The Big Smoke: A History of Air Pollution in London since Medieval Times* (Oxford: Routledge Revivals, 2011), 49.

³ Brimblecombe, *The Big Smoke*, 49.

⁴ Christine Corton, *London Fog: The Biography* (Cambridge: Harvard University Press, 2015), 3.

⁵ Brimblecombe, *The Big Smoke*, 49.

⁶ PD Smith, "London Fog by Christine Corton – the history of the pea-souper," *The Guardian*, Friday Nov. 27, 2015

⁷ Bill Luckin, "'The Heart and Home of Horror': The Great London Fogs of the late Nineteenth Century," *Social History*, Vol. 28, No. 1 (Jan. 2003): 34.

endured fog conditions akin to semi-darkness.⁸ Fogs were therefore an established component of the metropolis, and Londoners were familiar with their severity.

London fogs had their own distinctive character which gave them a certain memorability, as sulfurous soot particles in the air mixed with naturally occurring water vapor to create an atmosphere that was thick, persistent, and often described as greenish-yellow or even black in color.⁹ This was so much the case that the public denoted these fogs as ‘London particulars’ as early as the 1830s. Cartoon artist Michael Egerton was one of the first to use the term London particular in one of his color lithographs in 1827. Egerton depicts a man of fashionable, Regency-style dress, making his way through a foggy city, seemingly unable to view the oncoming horse and carriage in his path as he holds a yellow handkerchief to his mouth as a means of protection against the pollutants in the air (see Fig. 1).¹⁰ It is an image that confirms the commonplace nature of a fog serious enough to block a man’s view of his periphery and require the use of a handkerchief while navigating London’s streets. Though the notion of a London particular was quickly becoming used in a colloquial manner, it was indeed something particular to London, as fogs of this coloring and density were not found elsewhere, even in the most polluted cities of the industrial north.¹¹ The idea of the London particular was so compelling that even leading Victorian art critic and historian John Ruskin commented on it in one of his lectures, referring to a London particular as an “extremely cognizable variety of that sort of vapour” which he saw as the “especial blessing of metropolitan society.”¹² As a linguistic term a ‘London particular’ was so prevalent that even

⁸ Luckin, “‘The Heart and Home of Horror’: The Great London Fogs,” 34.

⁹ Corton, *London Fog: The Biography*, 14.

¹⁰ Corton, *London Fog: The Biography*, 24.

¹¹ Corton, *London Fog: The Biography*, 24.

¹² Corton, *London Fog: The Biography*, 25.

The New York Times in 1855, describing an American fog, wrote that except for its density, the fog had “none of the characteristics of our ‘old London particular.’”¹³



A Thoroughbred November & London Particular
by Michael Egerton, engraved by George Hunt,
published by Thomas Mclean, London, 1872
(color lithograph)

The term ‘London particular’ appears to have become an accepted term for fog by the date of this engraving.

The Stapleton Collection, Bridgeman Images.
Courtesy of Christine Cotton, *London Fog: The Biography*, p. 24

London particulars gained such a reputation that nineteenth century visitors anticipated the phenomenon. In 1888, James Russell Lowell, an American poet who also served as the U.S. Minister to England, wrote to an acquaintance while visiting London:

“We are in the beginning of our foggy season, and to-day are having a yellow fog, and that always enlivens me, it has such a knack of transfiguring things. It flatters one’s self-esteem, too, in a recondite way, promoting it is very

¹³ Corton, *London Fog: The Biography*, 25.

picturesque also. Even the cabs are rimmed with a halo, and people across the way have all that possibility of suggestion which piques the fancy so in the figures of fading frescoes. Even the gray, even the black fogs make a new and unexplored world not unpleasing to one who is getting palled with familiar landscapes.”¹⁴

Lowell’s writing conveys an eagerness to witness what had become such an expected aspect of staying in London. His take on the foggy season denotes the pervasiveness of London fogs, and his characterization of fogs as that which enlivens and transforms the environment points to a foreigner’s excitement toward the unaccustomed. To Lowell, part of his adventure of being in London was witnessing the fog. Indeed a ‘London particular’ was something unique and almost enviable, especially in the eyes of an American. London’s cliché fogginess was secure for decades to come.

Though London particulars grew to have a certain affinity, there were also voices which sought to raise awareness for their danger. One of the most prominent and intensely prophetic voices was that of Robert Barr (1850-1912). Barr was born in Scotland and moved to Canada when he was a child. He relocated to London as an adult and was eager to capture and write about London fog, a phenomenon which he had never previously experienced. He began prolifically publishing short stories in the 1890s after settling in the city, and became better known through socializing with some of the best-selling authors of his day, including Sir Arthur Conan Doyle, who described Barr as having a “violent manner, a wealth of strong adjectives, and one of the kindest natures.”¹⁵ Barr’s 1892 story titled “The Doom of London” provides a chilling fictional account of a disastrous London fog. His story is narrated by an

¹⁴ James Russell Lowell, *Letters*, ed. by Charles Eliot (Boston: Houghton, Mifflin, and Company, 1904), 215.

¹⁵ Corton, *London Fog: The Biography*, 99.

old man in the future (mid 20th century) who reflects on the most catastrophic of London fogs that wiped out almost the entire population of London in November at the end of the 19th century.¹⁶ The narrator was fortunate enough to have a respirator, and thus managed to escape the asphyxiation in a fog that enveloped the metropolis. Before divulging the full story on this apocalyptic fog, the narrator takes a moment to recognize that London fogs “differed from all others” and that fogs were so common in London, especially in winter, that no one particularly paid attention to them.¹⁷ In the section of the story titled “Why London, Warned, Was Unprepared,” the narrator compares the destruction of London to Pompeii, and contemplates a rather haunting truth: just as the inhabitants of Pompeii were so accustomed to the eruptions of Vesuvius that they gave little consideration to the possibility of their city being destroyed by a storm of ashes and an overflow of lava, so too were the people of London unprepared for a catastrophe from their fog.¹⁸

In Barr’s prophetic story, London’s doom comes from thousands of domestic chimneys that burned coal “for the purpose of heating rooms and of preparing food.”¹⁹ The black smoke emitted from chimneys remained trapped in London’s wet, cold air for seven days. The narrator describes the fog as beginning on a Friday, and seeming not “to have anything unusual about it” when it began, but by the seventh day the newspapers were “full of startling statistics” yet none of the significance fully realized.²⁰ Barr’s writing makes the link between coal smoke from domestic chimneys and the destruction of the metropolis undeniably apparent, and much like Barr’s story, the weather of the week leading into the 1952 fog would be relatively good, but conditions would deteriorate rapidly. As a closer look into the 1952

¹⁶ Robert Barr, “The Doom of London,” in *The Face and the Mask* (Urbana: Project Gutenberg, 2004)

¹⁷ Barr, “The Doom of London”

¹⁸ Barr, “The Doom of London”

¹⁹ Barr, “The Doom of London”

²⁰ Barr, “The Doom of London”

fog will reveal, his story is eerily exact in some of its conditions and only sixty years ahead of its time.

Chapter II: Britain's Shift to Coal and Early Air Pollution Monitoring

Coal was the key differentiator to England's economic development for the past two centuries. England's heavy reliance on coal can be traced back most significantly to the period of the Industrial Revolution, which ushered in a new age in which coal became the dominant source of heat energy throughout the nineteenth century. Historian E.A. Wrigley convincingly makes the argument that Britain's Industrial Revolution hinged on the use of coal as an energy source that enabled England to escape the constraints of an organic economy and overcome the Malthusian trap.²¹ He argues that the shift to coal was the linchpin that provided for positive feedback in the economy and allowed for sustained economic growth in England.²² The burning of coal powered the steam engines which the British used in factories, mines, and locomotives. The adoption of steam power allowed for greater output in factories overall, and in particular the greater production of iron and steel enabled the creation of a national rail network that reinforced coal's dominance by allowing its improved transport.

Urban areas, particularly London, were the concentrated sites of Britain's coal consumption and subsequent smoke production. The increase in the burning of coal from the beginning of the nineteenth to the turn of the twentieth century was more than tenfold, with Britain only burning about 15 million tons of coal in 1800.²³ Throughout the course of the nineteenth century coal had become such a part of the way of life that by 1913, over 183 million tons were burned in Britain, with over 15 million tons of coal burned in *London alone*.²⁴ While coal use was not new—Londoners had been adopting coal as a principal source of heat since the thirteenth century—the increased scale of its use was quite the

²¹ E.A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge: Cambridge University Press, 2010), 10.

²² Wrigley, *Energy and the English Industrial Revolution*, 11.

²³ Peter Thorsheim, *Inventing Pollution: Coal, Smoke, and Culture in Britain since 1800* (Athens: Ohio University Press, 2006), 4.

²⁴ Thorsheim, *Inventing Pollution*, 4.

phenomenon.²⁵ As Wrigley points out, much of this increased scale was fueled by, and in turn continued to fuel, industrial production in a positive feedback loop.

The Industrial Revolution set in motion a substantial change in which coal became inseparable from British life. Coal was *the* energy source to be used for any adaptable purpose, and cities in particular were the loci for smoke pollution. The ever greater industrial reliance on coal in turn catalyzed and bolstered the use of coal for domestic purposes. As more and more coal was being sought out and extracted, its extraction process improved, and its transportation facilitated through the railways, its use for fires in the home became all the more accessible and common. Industrialization also resulted in greater levels of urbanization and substantial population growth in cities, with London increasing from approximately one million inhabitants in 1800 to over six million the following century.²⁶ This increased crowding meant a greater concentration of coal smoke from the millions of domestic fires. One London visitor in the 1830s even described his view of the city as a “dense canopy of smoke that spread itself over her countless streets and squares, enveloping a million and a half human visitors in murky vapour.”²⁷

Though Britain’s reliance on coal was historically tied to industrialization, it is important to make the distinction that industrialization was not the immediate or outright culprit in the incidence of the 1952 fog. Industrialization should not be left out of the narrative, since it is where the roots of Britain’s shift to coal lies, but there is particular significance in the fact that the 1952 fog occurred in London. Whereas the smoke pollution of cities like Manchester, Leeds, and Birmingham was synonymous with industrialization, London’s terrible fogs were the products of domestic consumption.²⁸ In 1952, London was

²⁵ Thorsheim, preface to *Inventing Pollution*

²⁶ Thorsheim, *Inventing Pollution*, 5.

²⁷ Thorsheim, *Inventing Pollution*, 5.

²⁸ Jesse Taylor, *The Sky of Our Manufacture – the London Fog in British Fiction from Dickens to Woolf* (Charlottesville: University of Virginia Press, 2016), 2.

the world's biggest city and nearly all of its 8 million inhabitants used open coal fires.²⁹ In the case of the 1952 fog, the house chimney was the more dangerous enemy, not the factory chimney.

For most of the nineteenth century, scientists, engineers, and other specialists regarded the highly visible emissions from the tall smokestacks of industrial towns as the chief cause for problems associated with pollution.³⁰ The problems of industrial towns were significant, and Dicken's description of a fictional place like Coketown in his novel *Hard Times* (1854), deserves to be taken as a stand-in for real life industrial towns of the era. As Dickens writes, Coketown was a "blur of soot and smoke, now confusedly tending this way, now that way, now aspiring to the vault of Heaven, now murkily creeping along the earth...that showed nothing but masses of darkness—Coketown in the distance was suggestive of itself, though not a brick of it could be seen."³¹ The pollution from factories made Coketown both literally and figuratively shrouded in darkness, yet the real-life Coketowns of the industrial north were part of an understood British identity. The poor living conditions of these areas went unreformed for decades because coal smoke pollution was seen as the necessary byproduct of Britain's industrial success. Urban centers like Manchester were the vortices of production and pollution that kept the nation running strong. Any movement to control smoke needed to be a movement to control coal use and thus a potential threat to the British economy. London was not a Coketown, yet experienced the brunt of the issues associated with pollution in the North. Industrial cities like Manchester were supposed to have removed the problem from the city center, fulfilling John Evelyn's original dream. The problem of coal burning in London fell to the homes fires, yet recognition of the severity and significance of this remained

²⁹ "60 years since the great smog of London - in pictures," *The Guardian*, December 5, 2012

³⁰ Stephen Mosley, "'A Network of Trust': Measuring and Monitoring Air Pollution in British Cities, 1912-1960," *Environment and History*, Vol. 15, No. 3 (2009): 275.

³¹ Charles Dickens, *Hard Times* (London: Bradbury & Evans, 1854), 131.

nebulous given that the link between coal smoke and the industrial economy was firmly established.

Campaigns to Control Domestic Smoke

By the 1880s, the British public gained further awareness of the damage that the smoke emissions from private homes caused to human health. This was in large part thanks to the adamant campaigning of Francis Albert Russell, son of the former Prime Minister Lord John Russell, whose influential publication *London Fogs* (1880) claimed that the smoke from more than a million domestic chimneys, in combination with prolonged fogs, had choked to death some 2,000 Londoners during late January and early February 1880, primarily due to the exacerbation of pre-existing lung conditions.³² Russell argued that Londoners were willing to tolerate this “preventable evil” because a smoke-filled fog “performed its work slowly, made no unseemly disturbance, and took care not to demand its hecatombs very suddenly or dramatically.”³³ Though Russell was right in assigning much of the smoke pollution to domestic sources, he used largely subjective evidence to argue his point and did not have enough meteorological backing to support his claims.³⁴ For instance, Russell strongly believed that the major contributions of smoke were from the domestic sector since he observed that there were more fogs on Sundays and holidays than on working days.³⁵ These observations were based more on his personal memory than on adequate data, though his focus on the domestic side was certainly not misguided. Russell’s pamphlet was significant in

³² Mosley, “A Network of Trust,” 275.

³³ Stephen Mosley, “A Disaster in Slow Motion: The Smoke Menace in Urban-Industrial Britain,” in *Learning and Calamities: Practices, Interpretations, Patterns*, eds. Heike Egner, Marén Schorch, and Martin Voss (New York: Routledge, 2015), 102.

³⁴ Mosley, “A Network of Trust,” 275.

³⁵ Brimblecombe, *The Big Smoke*, 114.

its widespread readership in Victorian London, comparable to the impact of Rachel Carson's *Silent Spring* in our own time.³⁶

Without reliable statistical information on the sources of urban air pollution, it was difficult for reformers to make a strong case for political action that would interfere with an individual's entitlement to have an open coal fire in the home. Though publications like Russell's *London Fogs* propelled the domestic side of the issue to the forefront of the Victorian press, public confidence was difficult to win. Even the *Builder*, a prominent journal that was very supportive of the smoke abatement movement, mistrusted the evidence that was gathered by the disparate investigations of private individuals.³⁷ Smoke abatement societies like London's Coal Smoke Abatement Society and the Smoke Abatement League of Great Britain worked to raise awareness of the problems through exhibitions, public lectures, and extensive pamphleteering, though many of their efforts were localized and limited.³⁸ Efforts of smoke abatement groups brought the issues to the public's attention. Nevertheless, reformers struggled to bridge the credibility gap that existed in the public conscious. This problem of credibility stemmed not only from the empiricist outlook of public professionals, who wanted more comprehensive statistical data, but also from the general public opinion that activists were an unconsolidated group of cranks unnecessarily stirring up trouble.

Well into the twentieth century, Ernest Simon, the Chairman of the Smoke Abatement League of Great Britain, voiced the same concerns of prejudice that the anti-smoke activist was "almost universally regarded as an amiable and unpractical faddist" and that to solve this perception problem, the enthusiastic propagandist efforts of the abatement campaign needed to "be replaced by research, by scientific method, by helpful technical advice, and by education

³⁶ Brimblecombe, *The Big Smoke*, 114.

³⁷ Mosley, "A Network of Trust," 276.

³⁸ Mosley, "A Disaster in Slow Motion: The Smoke Menace," 103.

of both the manufacturer and of the public.”³⁹ Though smoke abatement groups worked continuously to change public perceptions of coal smoke as something inevitable to something preventable, its associations with wealth creation, employment, and home comfort were difficult to break.⁴⁰ Anti-smoke activists did not provide enough scientific data to convince the public toward their understanding of the air quality issue.⁴¹

Parliamentary Efforts around Smoke

Public perception of domestic coal smoke made national reform a low priority, and very little public persuasion amounted by the time the issue was brought before Parliament with the Public Health (Smoke Abatement) Bill of 1926. The work of smoke abatement groups was significant in spurring this Parliamentary consideration, yet the bill proved to be a feeble piece of legislation. In the House of Commons, Sir Arthur Holbrook argued strongly for the need to handle the domestic side of the issue, emphasizing to his fellow MPs:

“...we must make a start somewhere. There can be no harm whatever in asking builders who erect houses to take some precaution to check the exit of the smoke which is doing damage to property and vegetation and human life. There is an idea that all the smoke nuisance is caused by factories. That is not so. I have been in Manchester on a Sunday morning when domestic fires only were alight. The damage created by such an enormous volume of smoke as was then to be seen is almost incalculable.”⁴²

Sir Holbrook’s reasoning fell largely on deaf ears, and the nation’s home fires were left completely untouched by the provisions of the act.

³⁹ E.D. Simon and Marion Fitzgerald, *The Smokeless City* (London: Longmans, Green and Co., 1922), 1,3.

⁴⁰ Mosley, “A Disaster in Slow Motion: The Smoke Menace,” 107.

⁴¹ Mosley, “A Disaster in Slow Motion: The Smoke Menace,” 104.

⁴² *Parliamentary Debates*, Lords, Public Health (Smoke Abatement) Bill Clause 1, December 6, 1926, Vol. 200, No. 1827

The freedom to burn coal to keep warm was privileged as the prerogative of the individual in their own private dwelling, and the government was unwilling to pass legislation that would invade the Englishman's sacrosanct right to a roaring fire. Smoke from the traditional domestic fireplace conjured up feelings of well-being and comfort, and the fireplace was often the hub around which family life revolved. The open fire was considered such an essential part of the national home that attempts to abolish it were simply out of the question.

The open coal fire was thought to offer restorative capabilities for the family, and though associations of comfort for the domestic hearth were present in earlier periods, they became intensified during the war years and in post-war society.⁴³ The nation was encouraged to "Keep the Home Fires Burning" as the 1914 patriotic song by Novello and Ford goes; indeed the widespread popularity of the song alone reflects the position of coal fires in the cultural mindset of the early twentieth century.⁴⁴ The domestic hearth came to symbolize the home fires of the nation, and one of its greatest advocates was George Orwell, who considered the fire as an essential value of British society. In a column in the *Evening Standard*, Orwell writes that for "a room that is to be lived in, only a coal fire will do" and that subsequently "the survival of the family as an institution may be more dependent on it than we realise."⁴⁵ To Orwell, the coal fire encouraged sociability and was therefore a pivotal aspect of family life, with a gas or electric fire "a dreary thing by comparison."⁴⁶ He recognized the downsides of the coal fire—the dirtiness and the trouble of pollution—yet they were "comparatively unimportant if one thinks in terms of *living* and not merely of saving trouble."⁴⁷ Coal fires

⁴³ Lynda Nead, "'As snug as a bug in a rug': post-war housing, homes and coal fires," *Science Museum Group Journal*, December 6, 2017

⁴⁴ Nead, "'As snug as a bug in a rug'"

⁴⁵ Nead, "'As snug as a bug in a rug'"

⁴⁶ Nead, "'As snug as a bug in a rug'"

⁴⁷ Brimblecombe, *The Big Smoke*, 162.

were part of an English “chain of being” symbolic both of the individualized family home and of the nation, that seemed impossible to break.⁴⁸

Though many understood that the smoke from coal fires assisted in poisoning others outside the home, the public viewed the idea of switching to gas inside the home as impracticable on account of supply, cost, and unfamiliarity. Fear of being poisoned by a gas fire in one’s own home was a substantive threat in the public imagination.⁴⁹ Smoke abatement still largely seemed the concern of the industrialists and the intelligentsia, not of the general public.⁵⁰ The Public Health (Smoke Abatement Bill) of 1926 therefore kept its focus on industrial production only, tightening the regulation of industrial emissions through steeper fines and expanding the definition of ‘smoke nuisance’ to include soot, ash, and non-black smoke.⁵¹ Keeping the focus on industrial production was not an entirely misplaced effort, yet the legislation largely ignored and thus perpetuated the preconditions of the 1952 disaster.

Smoke abatement activists forced the debate once again in Parliament in 1931, and similarly the issue of public opinion came to the fore. Lord Parmoor put forth his view that real reform and modification of atmospheric pollution would not be possible “until public opinion is further educated in the right direction” and that the “great difficulty” of this issue remained the “prejudice of the ordinary man in favour of burning coal upon the open hearth.”⁵² In evaluating the progress of the 1926 Public Health Act, Lord Newton also noted its ineffectiveness, particularly in Section V of the Act, which made enforcement of regulation by local authorities unnecessarily difficult in its framing of by-laws, and in his mind, rendered implementation “unworkable.”⁵³ According to Lord Newton, the Ministry of Health needed to do more to encourage local authorities to promote smoke abatement. Key voices within the

⁴⁸ Nead, “As snug as a bug in a rug”

⁴⁹ Brimblecombe, *The Big Smoke*, 165.

⁵⁰ Brimblecombe, *The Big Smoke*, 162.

⁵¹ Mosley, “A Network of Trust,” 291.

⁵² *Parliamentary Debates*, Lords, Smoke Abatement, April 28, 1931, Vol. 80, No. 909

⁵³ *Parliamentary Debates*, Lords, April 28, 1931

House of Lords were keen to tout public ignorance yet engaged in no discussion of ways to shift public opinion. Smoke nuisance remained a local nuisance rather than a national one.

In the 1931 House of Lords debate, the MPs agreed that domestic hearths were the real offenders and were considerably worse in combustion compared to industrial furnaces, and this less complete combustion ultimately made for greater levels of tar and soot.⁵⁴ It was not simply the numbers of individuals burning coal fires in open grates, but the fact that the domestic grates caused greater damage in terms of each ton burned. Lord Cozens-Hardy also expressed the point that this imperfect combustion of coal in domestic grates and the subsequent waste of fuel made for economic loss to the nation, and that it could therefore potentially be good business to encourage the use of electric heating or gas heating.⁵⁵ He even went so far as to suggest a slight remission of income tax in the case of houses in which there were no bad smoke-producing appliances.⁵⁶ His suggestion was not a palatable one, and it was quickly passed over for talk of the overall expense of switching to gas.

Britain was in the thick of economic depression, and encouraging the individual consumer to make the switch to gas in the home was out of the question in this political moment. In such an economic downturn, the 1931 Labour government faced political danger in going after the ‘ordinary working man,’ and encouraging a shift away from coal use in the home would have been precisely the disruption that the government was unwilling to entertain. The Labour government made promises in favor of miners during the 1929 general-election campaign and had a vested interest in the coal industry’s profitable reorganization.⁵⁷ Fulfilling these promises, the government passed the Coal Mines Act of 1930 to protect

⁵⁴ *Parliamentary Debates*, Lords, April 28, 1931

⁵⁵ *Parliamentary Debates*, Lords, April 28, 1931

⁵⁶ *Parliamentary Debates*, Lords, April 28, 1931

⁵⁷ Arthur F. Lucas, “A British Experiment in the Control of Competition: The Coal Mines Act of 1930,” *The Quarterly Journal of Economics*, Vol. 48, No.3 (1934): 420.

miners' wages and introduce a system of quotas in the mining industry.⁵⁸ The Labour government had no intention to attack coal, hence matters with smoke nuisance were largely left to local politics.

The London press periodically alerted the public to the connection between domestic coal fires and atmospheric pollution, though public persuasion was slow to build. Even before the passage of the 1926 Public Health Act, *The Daily Telegraph* had published an article that tied kitchen chimneys to the bad fogs in London.⁵⁹ Throughout the 1920s and 1930s, newspaper articles called attention to the fact that the burning of coal in domestic grates was responsible for “hours of sunshine lost and fogs created” as well as the “loss of millions of pounds yearly, bad health, and soot-laden buildings with a dingy appearance.”⁶⁰ Despite growing awareness of the link between the domestic hearth and air pollution, it was difficult to break the image of the grand old English custom, bound up in sentimentality and nostalgia. In the minds of most of the British public, the resulting air pollution from domestic coal grates made for soot covered buildings, had negative impact on vegetation, and contributed to the London fogs that to many were part of the common occurrence of living in London, but no urgency existed in the matter. Though the issue was addressed in Parliament using the terminology of public health, domestic chimney smoke was not widely viewed as detrimental to health—it was a ‘nuisance’ rather than an emergency, viewed as a necessary consequence of affordable home heating with aesthetic repercussions.

⁵⁸ The Coal Mines Act of 1930 also had provisions related to hours of work and settlement of labor disputes. The Labour Party sought to suppress internal competition of the coal industry in the hope that prices could be maintained at a more profitable level. For our purposes, a diagnosis of the troubles of the British coal mining industry is not necessary, but it is important to recognize the Labour Party's role and the extent to which the coal industry's organization was dependent on Labour's involvement.

⁵⁹ “London Fogs, Kitchen Chimneys to Blame,” *The Daily Telegraph*, Tuesday June 19, 1923, Issue 21265, p. 6, *The Telegraph Historical Archive*, accessed Jan. 11, 2019

⁶⁰ “The Domestic Grate,” *The Daily Telegraph*, Wednesday Feb. 6, 1929, Issue 23007, p. 11, *The Telegraph Historical Archive*, accessed Jan. 11, 2019

The Public Health Landscape

To understand the public mindset leading into the 1952 disaster, a useful contextualization is to look at the perception of another issue that today seems inseparable from public health: cigarette smoking. According to current British public health expert and historian Virginia Berridge, cigarette smoking was not even a part of the British public health agenda until the 1950s.⁶¹ The notion of long-term “risk” in relation to lung cancer was not yet widely acknowledged, and any sort of central publicity approach to tackle cigarette smoking would involve asking people to curtail a deeply embedded cultural habit, not unlike reliance on domestic coal grates.⁶² The initial response to the link between smoking and lung cancer was also conditioned by the financial importance of tobacco and the close role of the British tobacco industry with government.⁶³ It was not until the 1960s that smoking was redefined as a public health issue, and with this redefinition eventually came a rise of new ideology that stressed individual responsibility for healthy lifestyle and behaviors.⁶⁴

During the beginning of the twentieth century, cigarette smoking and air pollution both needed the adoption of a stronger public health lens, and the parallels between these two issues help to illuminate general public attitudes toward health. Though it is easy to see these two issues today as essential pieces of the public health landscape, is it only in the 1950s and onward that these issues started to have a national public health framework, let alone be tied to notions of individual responsibility. Public reception of emerging scientific knowledge around the health concerns of smoking and air pollution was a slow process. A poignant illustration of this can be seen through a conversation about coal in Sam Selvon’s novel, the *Lonely Londoners*, which traces the experiences of black immigrants in the mid 1950s:

⁶¹ Virginia Berridge, “Smoking and the New Health Education in Britain 1950s-1970s” *American Journal of Public Health*, Vol. 95, No. 6 (2005): 956.

⁶² Berridge, “Smoking and the New Health,” 957.

⁶³ Virginia Berridge, “The Policy Response to the Smoking and Lung Cancer Connection in the 1950s and 1960s, *The Historical Journal*, Vol. 49, No. 4 (2006): 1185.

⁶⁴ Berridge, “Smoking and the New Health,” 956.

“‘Tanty, you wasting too much coal on the fire,’ Tolroy say.

‘Boy, leave me alone. I am cold too bad.’

Tanty put more coal on the fire.

‘You only causing smog,’ Tolroy say.

‘Smog? What is that?’

‘You don’t read the papers? Tolroy say. ‘All that nasty fog it have outside today and you pushing more smoke up the chimney. You killing people.’

‘So how else to keep warm?’ Tanty say.’⁶⁵

This question of “how else to keep warm” was indeed the question that needed answering, yet the question itself reflects more than just a public awareness issue. As medical experts conducted more research and published more medical reports throughout the 1950s, Britain saw the formation of a public health “policy community” that weakened political considerations and counterbalanced the priorities of industry.⁶⁶ In the cases of tobacco and coal, the electoral dangers of intervening in popular mass habits necessitated evidenced-based policy through strong networks of public health research. For tobacco, a major turning point would come with the Royal College of Physicians’ 1962 *Smoking and Health* report, while for coal, it was the aftermath of the 1952 fog and the findings of the committee assigned to investigate the incident where the initiations of a new style of public health commenced, as risky behavior among individuals slowly became a matter for government.⁶⁷

⁶⁵ Sam Selvon, *The Lonely Londoners* (London: Penguin Books, 2006), 57.

⁶⁶ Berridge, “The Policy Response to the Smoking,” 1185.

⁶⁷ Berridge, “The Policy Response to the Smoking,” 1201.

Chapter III: From London Particular to Deadly Phenomenon

The 1952 Fog as It Occurred

When the fog enveloped London from December 5th - 9th 1952, it certainly caught the public's attention, though not immediately as a matter of public health. For those five days London was in chaos: the blanket of sulfurous fog was so dense that visibility was less than half a metre.⁶⁸ The fog plunged London into such a sooty darkness that some individuals died, not from lung problems, but because they fell into the Thames and drowned because they could not see the river.⁶⁹ London transport was virtually shut down, with nearly all buses out of action. The London Underground was still running, but severely affected by the resulting congestion: on December 8th around 3,000 people queued for tickets for the Central line at Stratford in the evening.⁷⁰ Officials even cancelled the football match at Wembley Stadium—the first time the stadium had closed since its 1923 opening.⁷¹ The cover of the fog also allowed for a rise in footpad crime and burglaries, and Scotland Yard reported more robberies than would have been likely in an evening without the fog.⁷² The fog completely disrupted daily life, yet when the air finally cleared, most Londoners resumed life as normal, assuming the turmoil was over and having no idea the number of lives cost.⁷³

Since no computing shortcut for analyzing health data existed at the time, some delay in appreciating the scale of death associated with the fog was unavoidable. Ten weeks after the 1952 fog, the General Register Office finally published its calculation of the excess deaths

⁶⁸ “60 years since the great smog of London - in pictures.” *The Guardian*. December 5, 2012

⁶⁹ “60 years since the great smog,” *The Guardian*

⁷⁰ “1952: London Fog Clears after Days of Chaos,” *BBC on this Day*, December 9, 1952, accessed Jan. 10, 2019, http://news.bbc.co.uk/onthisday/hi/dates/stories/december/9/newsid_4506000/4506390.stm

⁷¹ “1952: London Fog Clears,” *BBC on this Day*

⁷² “1952: London Fog Clears,” *BBC on this Day*

⁷³ “Fourth Night of Fog Chaos in London,” *The Daily Telegraph*, Tuesday December 9, 1952, Issue 30400, p. 6, *The Telegraph Historical Archive*, accessed Jan. 11, 2019

with the estimate of 4,000 lives, relying principally on hospital records.⁷⁴ Though this number was a steep figure, Donald Acheson, a resident medical officer at the time of the fog at the Middlesex Hospital on Goodge Street (who later served as Chief Medical Officer of the United Kingdom from 1983-1991) believes the number was likely even higher. He suspects that given the extreme lack of visibility in the streets, more people died at home, without help, than in the hospital.⁷⁵ Though there was certainly pressure on hospital beds during the fog, and the national statistics would come to reflect this, we must also consider the large number of those who were likely horribly affected by the fog but not included in the national statistics. In the months following the disaster, the British press began to circulate the scale of damage done to health. As the national figure of 4,000 deaths gained currency in the press it also served as the impetus for a political response.

The British government was initially reluctant to accept the fact that so many people had died from breathing dirty air. In the House of Commons debate on air pollution in January 1953, there seemed little enthusiasm on the part of the government for new legislation.⁷⁶ The Minister of Housing at the time, Harold Macmillan, drew attention to the powers of local government authorities to enforce smoke abatement and expressed the view that no “further legislation [was] needed at present.”⁷⁷ Macmillan stressed to his fellow MPs the “broad economic considerations which have to be taken into account and which it would be foolish altogether to disregard.”⁷⁸

Macmillan’s broad economic considerations were consequential: Britain faced a war debt of more than £31 billion, as well as growing expenses for what was becoming the Cold

⁷⁴ Roy Parker in “The Big Smoke: Fifty years after the 1952 London Smog,” seminar held 10 December 2002 (Centre for History in Public Health, 2005): 16.

⁷⁵ Donald Acheson, in “The Big Smoke: Fifty years after the 1952 London Smog,” seminar held 10 December 2002 (Centre for History in Public Health, 2005): 22.

⁷⁶ *Parliamentary Debates*, Commons, 5th series, January 27, 1953, Vol. 510, No. 829

⁷⁷ *Parliamentary Debates*, January 27, 1953

⁷⁸ *Parliamentary Debates*, January 27, 1953

War.⁷⁹ Food rationing in Great Britain did not end completely until 1954, and this context inevitably affected the government's handling of fog.⁸⁰ Tied up in this was also the matter that to raise foreign exchange to pay off debts, the British government was selling cleaner burning coal reserves to U.S. and European businesses and keeping dirtier coal for use at home.⁸¹ The National Coal Board, a government-run monopoly, struggled to meet consumer demand for coal after World War II. As the winter heating season began in 1952, the Coal Board energetically encouraged household consumers to use low-quality (and highly polluting) "nutty slack" which went off the ration on December 1st of that year, whereas ordinary coal remained subject to rationing until 1958.⁸² Nutty slack was exceptionally filthy and smoky, but in the attempt to stretch fuel supplies, the National Coal Board pushed its advertisement as the thing that would "help to keep the home fires burning however cold and long the winter" (see Fig. 2).⁸³ The tenuousness of Britain's economic situation meant that in the immediate aftermath of the 1952 fog, the government treaded carefully in an effort to not disrupt Britain's war recovery.

⁷⁹ Devra Davis, *When Smoke Ran Like Water: Tales of Environmental Deception and the Battle Against Pollution* (New York: Basic Books, 2004), 45.

⁸⁰ Davis, *When Smoke Ran Like Water*, 45.

⁸¹ David V. Bates, "A Half Century Later: Recollections of the London Fog," *Environmental Health Perspectives*, Vol. 110, No. 12 (Dec. 2002): 735.

⁸² Thorsheim, *Inventing Pollution*, 161.

⁸³ "Display Advertising," *The Daily Telegraph*, Friday November 28, 1952, Issue 30391, p. 10, *The Telegraph Historical Archive*, accessed Nov. 6, 2018

Announcement by the
NATIONAL COAL BOARD



After the 1st December you can have
as much Nutty Slack coal as you like
off the ration

20/- a ton (1/- a cwt.) cheaper than ordinary house coal

You can now buy as much Nutty Slack as you like It's off the ration. Nutty Slack is much smaller coal than you are used to, but it burns brightly and warmly if you mix it sensibly with your ordinary house coal.

What is Nutty Slack? Nutty Slack is just what it is called—slack with nuts in it ranging in size up to lumps about as big as two match boxes put together. Your coal merchant will show you Nutty Slack and tell you how to make the best use of it. It is just as expensive to mine and to carry on the railways as ordinary house coal. But it is offered at 20/- a ton cheaper than ordinary (Group 4) house coal because it is not as clean and is smaller.

For open or closed fires It is good fuel to use in an open fire or an openable heating stove, mixed with your ordinary house coal. It is perfect for banking up your fire at night or when you are going out. It is particularly useful in a modern continuous burning grate.

Order as much as you like You can buy it from your own or any other coal merchant and you can have as much as you like all through this winter. But don't wait till all your ordinary coal allowance is finished before you buy Nutty Slack. Order your Nutty Slack this week in time for Christmas. Use it with your ordinary house coal and make sure you get through the winter in comfort.

NOT AVAILABLE IN SOME AREAS
Nutty Slack will not be available in Scotland, South Wales, Cumberland, Durham and Northumberland, but in these areas other off-the-ration coal may be available.

Nutty Slack
will help to keep the home fires burning however cold and long the winter

A large-scale enquiry carried out this year for the Coal Utilisation Council shows that—

1. 98 out of every 100 families in Great Britain have a coal fire of some sort in their main living room;
2. 84 out of every 100 families have no other way of heating that room;
3. 44 out of every 100 families say they need more coal than they are allowed.

Nutty Slack will help

Fig. 2 Advertisement for Nutty Slack, *The Daily Telegraph*, Friday November 28, 1952

Making Sense of the Fog

Anonymous researchers who first analyzed the fog for the official National Health Service investigation found that death rates did not return to normal for nearly three months after the fog, and deaths and illness remained abnormally high until the end of March 1953.⁸⁴ Health workers understood that the problems of air pollution were significantly worse than previously perceived, though the general public did not. As London citizens began to discern this, a falsehood started to spread that a terrible case of influenza coincided with the timeline of the 1952 fog, and that the flu was the real reason for the death count. It is unknown who or what group was responsible for the circulation of this notion, but consequently the British

⁸⁴ Davis, *When Smoke Ran Like Water*, 47.

Ministry of Health's initial report wrongfully hypothesized the additional deaths to have been caused by influenza.⁸⁵ No evidence to support the explanation of a deadly flu exists, but the idea of an epidemic was more acceptable the alternative. A retrospective assessment of mortality from the 1952 fog by environmental epidemiologists Michelle Bell, Devra Davis, and Tony Fletcher in 2004 finds that only an extremely severe influenza epidemic could account for the majority of excess deaths in this period.⁸⁶ Such an epidemic would have needed to be twice the case-fatality rate and quadruple the incidence observed in general medical practice during the winter of 1953.⁸⁷ Their reassessment shows that only a fraction of the elevated mortality in the months after 1952 London fog can be attributed to influenza, leaving thousands of deaths otherwise unexplained. Early government reports used December 20th, 1952 as a cut-off date and failed to attribute any deaths to pollution after it, though mortality rates remained elevated for several months.⁸⁸ Taking into account the effects of the fog in the months after the episode (through March 1953), Bell et al.'s retrospective findings indicate that the mortality count would be 12,000 rather than the 4,000 generally reported for the deaths linked directly to the fog episode.⁸⁹

⁸⁵ Davis, *When Smoke Ran Like Water*, 48.

⁸⁶ M. L. Bell, D. L. Davis, & T. Fletcher, "A Retrospective Assessment of Mortality from the London Smog Episode of 1952: the Role of Influenza and Pollution," *Environmental Health Perspectives*, Vol. 112, No. 1 (2004): 8.

⁸⁷ Bell et al. "Retrospective Assessment," 6.

⁸⁸ Bell et al. "Retrospective Assessment," 7.

⁸⁹ Bell et al. "Retrospective Assessment," 8.

Seeing through the Fog: the Reported Numbers

Two groups first to grasp the severity of the 1952 fog were the undertakers and florists, who knew there was a problem as there became a shortage of caskets and flowers.⁹⁰

Dr. Robert Waller, who worked at St. Bartholomew's Hospital at the time, recalls those shortages as one of the first indications that so many people were dying.⁹¹ He also remembers that he couldn't see clearly to the end of the hospital ward, not only because the ward was so full of patients, but because the polluted air made it so difficult to see—even inside the building.⁹²

Hospital admissions, pneumonia reports, and applications for emergency bed service followed the peak of this polluted air. Reports from the medical journal, *The Lancet*, in January 1953 showed that in the week ending on December 13th (about two weeks from the start of the fog) there were 4,703 deaths in Greater London, and the Emergency Bed Service dealt with 2,007 hospital admissions, more than double the admissions for the corresponding week of 1951.⁹³ Reports of two conditions—those classified as “upper respiratory tract affections” and “respiratory disorders” increased considerably in the weeks after the fog.⁹⁴ Another report from *The Lancet* in February of 1953 found that one of the most striking features of the incident was the rapidity at which deaths started to increase during the fog itself.⁹⁵ Even on December 5th, the first day of the fog, an increase in the number of deaths was evident, with daily death totals mounting rapidly on the third and fourth days.⁹⁶ Though the daily death total was in decline by December 15th, it remained almost twice as high as

⁹⁰ “Historic Smog Death Toll Rises,” *BBC News*, December 5, 2002, accessed November 5, 2018

⁹¹ “Historic Smog Death Toll,” *BBC News*

⁹² “Historic Smog Death Toll,” *BBC News*

⁹³ G.F. Abercrombie, “December Fog in London and the Emergency Bed Service,” *The Lancet*, Vol. 261, No. 6753 (January 31, 1953): 234.

⁹⁴ Abercrombie, “December Fog in London”

⁹⁵ W.P.D. Logan, “Mortality in the London Fog Incident,” *The Lancet*, Vol. 261, No. 6755 (February 14, 1953): 336.

⁹⁶ Logan, “Mortality in the London Fog Incident,” 338.

before the fog began (see Fig. 3).⁹⁷ These medical journal reports made the correlation between fog and death rate undeniable.

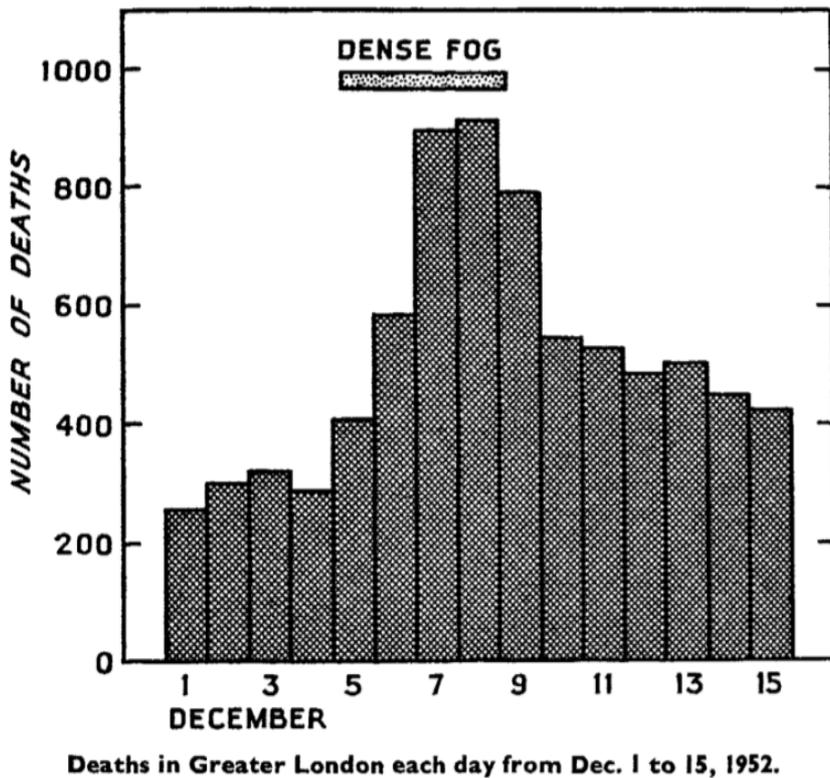


Fig. 3
Mortality in the London Fog,
The Lancet, February 14,
1953, p. 338

No immediate outcry followed the 1952 episode; if anything, public reactions could be characterized as strangely calm.⁹⁸ The frequency with which Londoners saw serious fogs can help to explain the initial apathetic acceptance. Newspapers devoted considerable attention to the fog as it was occurring, but initial reports said little of the effect on health.⁹⁹ Though the 1952 fog certainly lasted longer than previous ones, public concern became palpable when the fog's lasting assault on health became more discernible. The rise of statistical reports in the aftermath of the fog spurred unrest among the public. Here the press

⁹⁷ Logan, "Mortality in the London Fog Incident," 338.

⁹⁸ J.B. Sanderson, "The National Smoke Abatement Society and the Clean Air Act (1956)," *Political Studies* Vol. 9, No. 3 (October 1961): 243.

⁹⁹ Thorsheim, *Inventing Pollution*, 163.

was key: *The Manchester Guardian* reported the fog during its occurrence in December as the “Third Day of a London Particular,” but by the end of January 1953, as death tolls were coming to light, reported it as “Worse than 1866 Cholera.”¹⁰⁰

Toward a Recognition of Crisis

The shift in public mindset away from the familiarity of accustomed fogs and toward recognition of disaster became apparent as more of the nation referred to the 1952 episode as ‘smog.’ The notion of smog was not new however; scientist Henry Antoine Des Voeux, honorary treasurer of the Coal Smoke Abatement League, devised the term in 1904 to call attention to the smokiness of London's fogs. Des Voeux wanted to apply the name smog to “what is known as the ‘London particular,’” to inform that public that it “consists much more of smoke than true fog.”¹⁰¹ Though the word “smog” was a valuable addition to the political vocabulary of smoke abaters, it did not widely catch on as a term in London until after the 1952 disaster.¹⁰² Though true London fog was always a combination of smoke and fog, what Des Voeux called “smog,” the widespread adoption of the term hinged on the 1952 disaster. Today, the primary name given to this event is “Great Smog of London” or the “Great Smog of 1952,” yet this terminology is retrospectively applied.

By November 1953, almost a year after the horrific fog, London’s press regularly referred to *smog* rather than fog. The increased adoption of smog as a term correlated to the acknowledgement of the extreme death tolls. An article from *The Daily Telegraph* even reported death rate calculations in line with Bell et al.’s present day reassessment of the death

¹⁰⁰ “Third Day of a London Particular,” *The Manchester Guardian*, December 8, 1952, *Proquest Historical Newspapers*; “Worse than 1866 Cholera,” *The Manchester Guardian*, December 31, 1953, *Proquest Historical Newspapers*

¹⁰¹ Christine Corton, *London Fog: The Biography* (Cambridge: Harvard University Press, 2015), 27.

¹⁰² Sanderson, “National Smoke Abatement,” 246.

toll, proposing “12,000, Not 4,000 Killed by London Smog.”¹⁰³ Smog made headlines because it seemed impossible that London’s historic fog could be responsible for this level of atrocity. The transition from fog to smog marked a linguistic departure representative of a shift in collective consciousness from the notion of fog as a tolerable phenomenon to instead a significant danger to be eliminated.

As Londoners prepared for the winter ahead, newspapers reported on the distribution of protective measures like smog masks and goggles, which were even termed “smoggles.”¹⁰⁴ Though smog masks were arguably a paltry tactic, the national insistence on their use confirmed the reality of London’s killer smog. No longer would Londoners be expected to hold handkerchiefs or cloths to their mouths while travelling through fog—now smog masks were the required response.

Physicians and ministers recognized smog masks as a feeble measure of protection with limited value, as both groups realized that the true danger came from the sulfur dioxide fumes, and smog masks did not offer any substantial protection against gaseous contents.¹⁰⁵ Lord Amulree held up a smog mask before the House of Lords and gave his opinion on their inadequacy, stating that a mask:

“is to prevent (to use a rather vulgar thought) the surgeon from being forced to spit into the wound when he is talking, or something like that. Masks are perfectly all right for that kind of thing, but I doubt whether they will be of any value in dealing with these tiny particles, which are the really dangerous things and which can get round the corners of the mask, and penetrate the mesh of the gauze.”¹⁰⁶

¹⁰³ “12,000, Not 4,000, Killed by London Smog,” *The Daily Telegraph*, Nov. 12, 1953, p. 8, *The Telegraph Historical Archive*, accessed Nov. 6, 2018

¹⁰⁴ “Great Britain: Smoggles,” *Time Magazine*, Monday Nov. 9, 1953, accessed Nov. 6, 2018

¹⁰⁵ “Smog Masks ‘Feeble,’” *The Daily Telegraph*, Thursday Nov. 19, 1953, Issue 30693, p. 9, *The Telegraph Historical Archive*, accessed Nov. 6, 2018

¹⁰⁶ *Parliamentary Debates*, Lords, 5th series, November 18, 1953, Vol. 184 No. 374

Distressed by the lack of any comprehensive official government response, doctors still urged Londoners to protect their lungs with sixpence worth of gauze folded into a mask to be tied over the mouth and nose. Doctors hoped the mesh of the mask would “arrest most of the soot, while moisture from the breath, condensed on the mask, would prevent passage of some of the chemicals that cause lung trouble.”¹⁰⁷ London shopkeepers were keen to seize on the opportunity, with reports of chemists’ shops running out of gauze.¹⁰⁸ One main issue, however, was that the more efficient the mask, the more difficult it was to breathe through, particularly in the case of bronchitis patients and those suffering from cardiac diseases, for whom smog is especially dangerous.¹⁰⁹ In response to the masks, the British Medical Association released a statement that “the whole problem of the effect of smoke on health needs to be tackled at the source” and that the country needed clean air.¹¹⁰ Smog masks were at least a discernible start to tackling this great issue, and they served as a visual symbol of a preventive measure.

Government Investigation

The fact that smog masks were the main government tactic by the following winter of 1953 makes it clear that government reluctance to deal with the aftermath of the 1952 disaster was still appreciable. In a memorandum to the cabinet, dated November 18th 1953, Harold Macmillan wrote: “Today everybody expects the government to solve every problem. It is a symptom of the Welfare State...For some reason or another ‘smog’ has captured the imagination of the press and the people. Ridiculous as it appears from first sight I would suggest that we form a committee. We cannot do very much, but we can seem to be very

¹⁰⁷ “Great Britain: Smoggles,” *Time Magazine*

¹⁰⁸ “Fog Masks May be Too Easy: Ministry Suggests Alternatives,” *The Daily Telegraph*, Thursday Oct. 29th, 1953, Issue 30675, *The Telegraph Historical Archive*, accessed Nov. 6, 2018

¹⁰⁹ “Fog Masks May be Too Easy,” *The Daily Telegraph*

¹¹⁰ “Is ‘Smog’ Mask under Health Service,” *The Daily Telegraph*, Saturday Nov. 14, 1953, Issue 30689, p. 7, *The Telegraph Historical Archive*, accessed Nov. 6, 2018

busy—and that is half the battle nowadays.”¹¹¹ Macmillan himself acknowledged the way in which the psychological underpinnings of smog’s conception kept the issue at the forefront of politics. Though he mentions the Welfare State with sarcastic connotation, he is right to call attention to its role in shaping the public’s expectations.

After the Second World War, the introduction of the Welfare State imposed a stronger sense of national responsibility for the health. The formation of the National Health Service under the Welfare State also meant greater acceptance of financial burdens on the government for illness prevention.¹¹² The Welfare State helped to generate the national consensus that the obligation to deal with matters of health fell to the government. Once the 1952 fog became ‘smog,’ i.e. the public understood it as a public health crisis, the expectation that government would act was irreversible. Though Macmillan still sought to balance this against considerations of Britain’s war debt, the actions and legacy of the Welfare State primed the government with a willingness to intervene on matters of health to a newfound degree.

While much is owed to the influence of British press as the forces on the ground that spurred public understanding of smog, Labour MP Norman Dodds also deserves credit for continually pressing the matter in Parliament. Five months after the fog episode, he fervently urged the formation of an investigative committee to cover the 1952 disaster. While addressing the House of Commons in May 1952, Dodds brought up a fog in Donora, Pennsylvania, which killed twenty people in 1948, and made reference to how the “whole [American] nation was shocked when 20 persons died and several more became ill,” yet the British government had still refrained from a public inquiry into the heavy death toll.¹¹³ “America usually does things in a bigger way than we do,” he stated, “but I wonder what they

¹¹¹ Mick Hamer, “Ministers Opposed Action on Smog,” *New Scientist* (January 5, 1984): 3.

¹¹² Corton, *London Fog: The Biography*, 332.

¹¹³ *Parliamentary Debates, Commons*, 5th series, May 8, 1953, Vol. 515, No. 846

are thinking about 6,000 English people dying in Greater London alone.” Dodds made his remarks with vigor and urgency, declaring that if nothing was to be done, “We may even once again in the London streets hear the cry, ‘Bring out your dead.’” His rhetoric was hard to ignore, and he was one of the key players that forced the attention of the British government.

After a buildup of pressure from the British press, the public, and individuals like Norman Dodds, the government officially formed the Committee on Air Pollution (called the Beaver Committee for its chairman, Sir Hugh Beaver) in July 1953. It was a considerably strong group whose mandate was to conduct a comprehensive study of “the nature, causes and effects of air pollution, and the efficacy of present preventive measures.”¹¹⁴ The Beaver Committee’s final report summarized much of what was known about the effects of air pollution at the time, condemning its harm on public health while also estimating that the pollution caused £150 million in damage to textiles, metals, and buildings each year, and that it cost at least another £100 million in time lost to illness and transportation delays.¹¹⁵ The report made it clear that air pollution did not just cost lives, but also cost a great deal to the British economy. The committee’s work drew together much of the thinking on smoke abatement that had accumulated throughout the previous decades and treated air pollution as a public health crisis that required a campaign as vigorous as the one waged by nineteenth-century sanitary reforms for safe water.¹¹⁶ The economic and health costs of air pollution were too dire to be ignored, and not just in the context of the 1952 smog episode. The Committee was therefore careful to frame its findings in a way that did not simply make for a short-term magnification of the overall problem of air pollution.

¹¹⁴ *Parliamentary Debates*, Commons, 5th series, July 21, 1953, Vol. 518, No. 201

¹¹⁵ Thorsheim, *Inventing Pollution*, 175.

¹¹⁶ Brimblecombe, *The Big Smoke*, 169.

In reflecting on the work of the committee, Chairman Hugh Beaver noted: “we expressly avoided basing our arguments on the danger to health of particular incidents, such as the London smog of 1952. Not that we minimized that catastrophe in any way, but we felt that undue emphasis on it, would distract attention from the fact that damage to health and danger to life were going on all over the country, all the time, year in and year out.” All of Britain, as he put it, constituted a “single permanently polluted area.”¹¹⁷ Though based in London, the entire committee met with local authorities, businesses, and nongovernmental organizations in many of the most polluted places in Britain, including Manchester, Glasgow, and Birmingham.¹¹⁸ The problem required more than damage control: it needed an extensive and comprehensive national strategy.

The Clean Air Act of 1956

The 1952 fog had made the dangers of polluted air obvious and unavoidable, therefore action for clean air would receive broad enough public support that both the Conservative and Labour parties supported air pollution reform in the 1955 election.¹¹⁹ Building upon the findings of the Beaver Committee, the government passed the Clean Air Act of 1956, which prohibited “dark smoke” from chimneys, and limited smoke, grit, and dust from both industrial and *domestic* sources.¹²⁰ This legislative piece makes the act something of a milestone, since it was the first legal provision to control domestic smoke. The desire for cleaner air undoubtedly had to be supported by the public at large, for that desire meant a degree of infringement on public liberty which would not have been tolerated twenty years earlier. Here a new measurement for defining “dark smoke” became crucial: the

¹¹⁷ Thorsheim, *Inventing Pollution*, 174.

¹¹⁸ Thorsheim, *Inventing Pollution*, 175.

¹¹⁹ Brimblecombe, *The Big Smoke*, 169.

¹²⁰ “Clean Air Act 1956 Chapter 52,” *The National Archives*, July 5, 1956, accessed November 8, 2018

Clean Air Act prohibited any smoke which appeared to be as dark or darker than shade two on the Ringelmann Chart (see Fig. 4).¹²¹ With previous public health legislation, determining what one would have defined as “black smoke” proved a challenge and enabled too many exemptions within the legislation.¹²² With a regularized scale for measuring the density and opacity of smoke, the inclusion of the chart fulfilled an important need in smoke abatement work and allowed for an established standard of compliance.

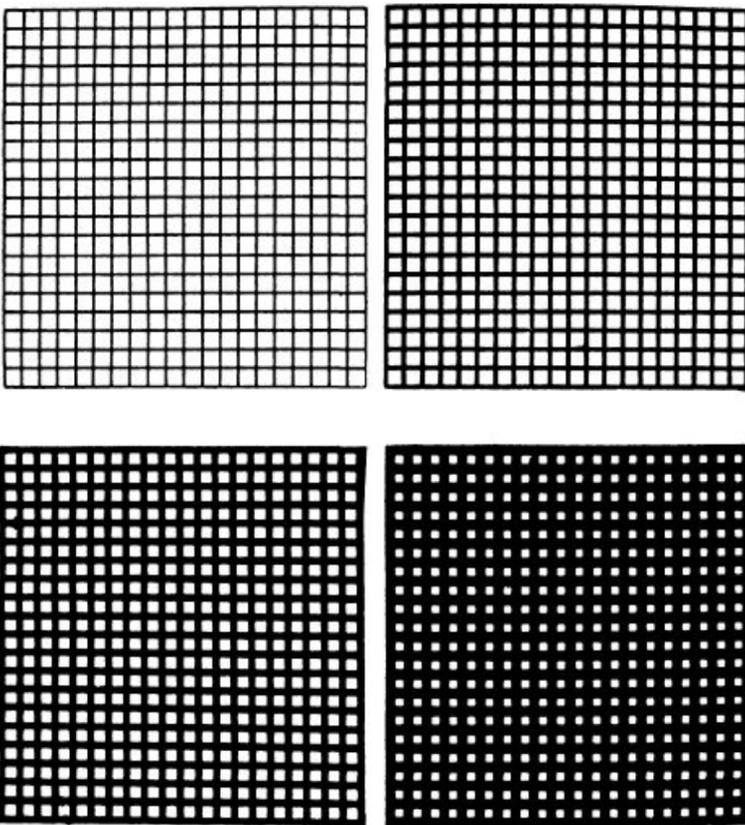


Fig. 4

The Ringelmann Chart for measuring the density/opacity of smoke, in Brimblecombe, *The Big Smoke*, p. 170

¹²¹ Brimblecombe, *The Big Smoke*, 170.

¹²² Brimblecombe, *The Big Smoke*, 164.

The Clean Air Act enabled local government to set up smoke control areas (often called smokeless zones) and within these areas the emission of dark smoke was prohibited unless it was the result of burning an authorized fuel which was specified in the regulations and included solid smokeless fuels.¹²³ Local cooperation was therefore essential, as the creation and enforcement of smokeless zones was the responsibility of local authorities. The National Smoke Abatement Society suggested the establishment of smokeless zones in the 1930s, but war delayed such implementation.¹²⁴ The industrial center of Manchester was one of the first places to utilize the strategy with the Manchester Corporation Act (which passed in 1946 but went into effect in 1952).¹²⁵ From 1952-53 the act so greatly reduced smoke pollution in the target area in Manchester that it became a prime example for the Beaver Committee's recommendations. Such was the influence of the Manchester Corporation Act that the Clean Air Act of 1956 stipulated identical fines for non-compliance of its conditions.¹²⁶

In looking at the Manchester experience, the Beaver Committee recommended the formation of smoke control areas in the most highly polluted parts of Britain—industrial and residential places where large quantities of coal were consumed within a small area and which experienced frequent natural fogs.”¹²⁷ The committee also considered alternative energy sources to replace coal for domestic heating. Although gas and electricity offered advantages, few people in the mid 1950s seemed willing to switch entirely, and the committee was eager to propose reforms that would not be too expensive. The Beaver Committee therefore recommended that coal be phased out by coke, a solid smokeless fuel made from coal. Converting a typical coal-burning fireplace to burn coke cost between £3

¹²³ “Clean Air Act 1956 Chapter 52”

¹²⁴ Robert Heys, “The Clean Air Act 1956,” *British Medical Journal*, Vol. 345, No. 5751, August 24, 2012, accessed November 2, 2018

¹²⁵ Heys, “Clean Air Act”

¹²⁶ Heys, “Clean Air Act”

¹²⁷ Thorsheim, *Inventing Pollution*, 176.

and £5, but converting it to burn gas cost between £10 and £20.¹²⁸ The Beaver Committee also proposed that the national government reimburse owners or occupiers in smoke control areas 50 percent of the cost of replacing old household coal-burning appliances with ones that could use smokeless fuel, but the government's bill reduced the size of the subsidy requiring owners or occupiers of private houses to pay 30 percent of the cost, with local authorities paying another 30 percent, and the national government contributing the final 40.¹²⁹ Here the government had the opportunity to make clean air an explicit measure of national policy through subsidies, yet maintained financial caution.

The Clean Air Act largely responded to the Beaver Committee's suggestions, yet the act itself was not a radical piece of legislation. The hand of the Federation of British Industry may have been at work in the drafting of the bill, as the act gave industry seven years before full compliance was required. By 1960, eighty-five of the most polluted localities in Britain had not even developed a plan to deal with their smoke—twenty-one localities denied that they had a problem, and thirty were reluctant to prohibit the use of coal because some of their constituents, miners and their families, received free coal as part of their wages or pensions.¹³⁰ What would eventually lead to clean air in many mining communities was the collapse of the coal industry beginning in the 1970s. As mine after mine closed, most of the air pollution in these communities ceased, as laid-off workers lost not only their jobs but also their free coal.

Much of what ultimately allowed for the Clean Air Act's success were the circumstances which arose to positively reinforce the legislation. By 1965, the British oil industry discovered natural gas in an area of the North Sea claimed by Britain, and within a

¹²⁸ Thorsheim, *Inventing Pollution*, 176.

¹²⁹ Thorsheim, *Inventing Pollution*, 180.

¹³⁰ Thorsheim, *Inventing Pollution*, 189.

matter of years the country converted entirely from manufactured gas to gas from the North Sea.¹³¹ As natural gas grew in importance throughout the 1970s and its price began to decline relative to coke, the long-held assumption that coal would continue to be Britain's main energy supplier began to dissipate. The Beaver Committee had originally deemed 294 areas in England as "black areas" and in urgent need of smoke control, and by 1974, all but fourteen local authorities had taken steps toward implementing the act.¹³² Household coal consumption declined steadily and dramatically, falling to only one-sixth of its 1956 level by 1980.¹³³

Despite the knowledge that much of the damage caused by pollution arose from sulfur dioxide, the Clean Air Act was restricted to the prevention of *visible smoke*. Reduction in the amount of visible smoke itself has indeed been a success: the amount of smoke in the air by the start of the 21st century has been reduced by 80 percent of the level at the time of the Great Smog.¹³⁴ However, the focus on visible smoke did not get to the root of the problem, for it was the levels of sulfur dioxide in the 1952 smog that had made people sick and had contributed to so many deaths. Extracting and removing the sulfur content from the coal was costly and difficult to implement, thus it fell by the wayside in the legislative planning process.¹³⁵ The introduction of smoke control zones and the focus on reducing visible smoke were not entirely misplaced efforts, for these measures did in turn lower emissions of sulfur dioxide, particularly where there was a switch to electricity, gas, or low-sulfur oils.¹³⁶ The use of solid smokeless fuels like coke, which generally had a lower sulfur content than

¹³¹ Thorsheim, *Inventing Pollution*, 190.

¹³² Brimblecombe, *The Big Smoke*, 171.

¹³³ Thorsheim, *Inventing Pollution*, 189.

¹³⁴ Brimblecombe, *The Big Smoke*, 171.

¹³⁵ Thorsheim, *Inventing Pollution*, 179.

¹³⁶ Brimblecombe, *The Big Smoke*, 171.

ordinary coal, also ultimately helped to reduce sulfur dioxide levels. This was an instance where legislative flexibility worked in favor of the environment over time.

The Clean Air Act placed heavy stock not on directly reducing the pollution, but in more *efficiently dispersing* it into the environment. The reduction of sulfur emissions therefore stands more as a by-product of the legislation rather than being at its core, and the “Clean Air” Act falls short of its titular duty. The Clean Air Act of 1956 should be considered a turning point in environmental history, but it should not be heralded as legislation that was ahead of its time. Key to its passage was the fact that it emerged in a context in which public opinion backed smoke abatement—a context which was decades in the making. The Clean Air Act was a measured response to an environmental disaster which necessitated change. As gas and electricity became more reasonably priced, the Clean Air Act was able to operate to a fuller effect. The improvements in London’s air have been significant: annual averages of smoke and sulfur dioxide concentrations in London have fallen dramatically in the fifty years since the passage of the Clean Air Act (see Fig. 5).¹³⁷ The 1956 Clean Air Act can thus be seen as a major initial tick mark on the timeline of improvements in air quality throughout the second half of the 20th century, but to attribute a half-century’s worth of improvements to this moment would be misguided.

¹³⁷ “50 Years On: The Struggle for Air Quality in London Since the Great Smog of December 1952,” *Greater London Authority* (December 2002): 16.

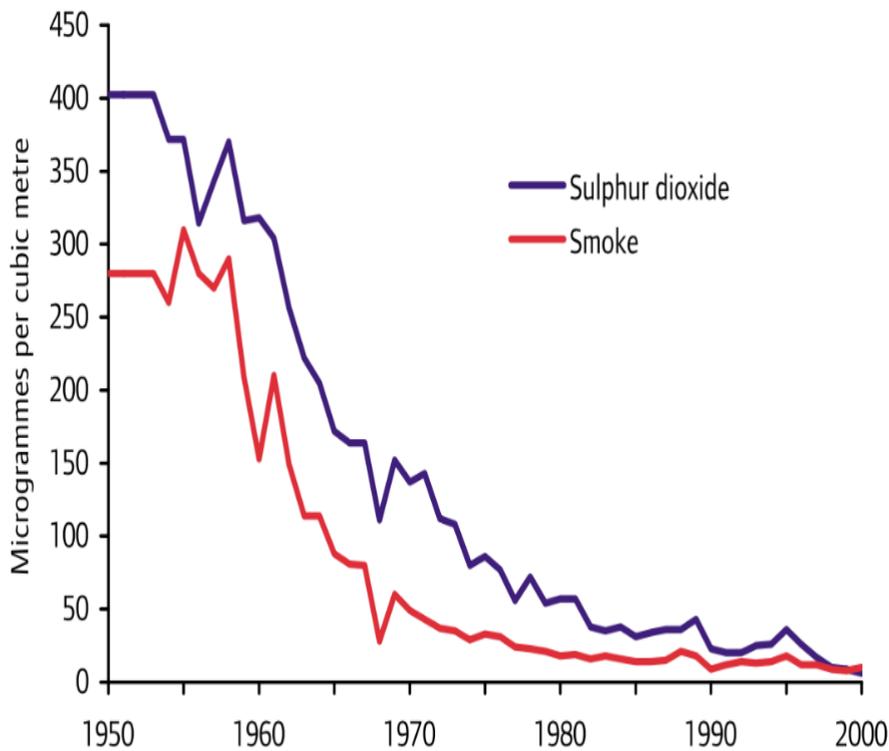


Fig. 5

Average annual smoke and sulfur dioxide concentrations in London 1950 to 2000, *Greater London Authority*, p. 16

The traditional, yellowish, choking fogs of London have been consigned to the past, and the focus of environmental policy has shifted away from coal and sulfur dioxide, though London's air pollution remains a major issue. The new London 'smog' of today is ground-level ozone, caused by sunlight acting on pollutants like nitrogen oxides and volatile organic compounds namely from motor vehicle exhausts, fostered by hot weather conditions rather than cold winters.¹³⁸ The pollution mix has changed with automobile traffic emerging as the predominate source, and the nanosize particles that form today's photochemical smog make it much less visible than the London fogs of the past. No longer are there London particulars, but instead a worldwide smog problem.

¹³⁸ John Vidal, "UK air pollution: why are we only now waking up to this public health crisis?" *The Guardian*, March 19, 2013.

Conclusion

The aftermath of the 1952 fog finally converted public opinion to the understanding that the domestic coal fire was the paramount culprit to London's traditional, yellowish fogs. Fogs of this sort were historically a London phenomenon because of the centrality of the domestic hearth in British culture. The coal fire had been the heart of family life in England, but the home fires could not keep burning in the face of unassailable consequences to public health. A new focus for family life was needed, and by the middle of the 1950s, the television emerged as an alternative that eased the transition away from the domestic hearth. Though it could not provide warmth, the television set fed the fantasy of the cosy hearth and served as the new home object around which families could orient.¹³⁹ The question of "how else to keep warm?" was still what needed answering, but what made it so difficult to answer was the fact that coal fires represented so much more than just warmth.

The 1952 disaster was a crucial moment that forced the British public to evaluate their coal fires and recognize their false necessity. The event therefore led to a departure from long-held public perceptions that coal fires and nasty fogs were simply the ways of British life. The societal acceptance and the regularity of London's famous fogs made it that much more difficult to immediately apprehend the degree of crisis. Hence when that shift in public opinion did finally materialize, it permanently changed the landscape of public health. Though it seems self-evident today that this story belongs to the realm of public health, the history presents a much bleaker development of public perception. However, a marker of progress can be gleaned from this critical advancement: London's fogs can no longer be seen

¹³⁹ Nead, "As snug as a bug in a rug"

as separate from domestic coal smoke in the long history of air pollution. They have come down from their atmospheric glory.

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