SECTION 3

ALTERING THE ENVIRONMENT

Chapter 10

FROM STALE AIR TO TOXIC: CONCERNS ABOUT URBAN AIR IN FINLAND

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For one week in May 1969, air pollution made the headlines in the Finnish press, as central Helsinki was dominated by a variety of protests about the unacceptable state of the city air. In the central square stood three-metre-high plastic lungs covered with paste that gathered soot and dust from the air. The student demonstrators entered public transport in gas masks and showed posters with slogans such as 'Lead kills slowly!' and 'Lead and sulphur explode our organs!' Even a choir was gathered in the central square singing about the dangers of strontium, a substance known to the public from the nuclear fallouts of the 1950s. Next to the choir was an oxygen bar where fresh air and information about the effects of air pollution were provided to passersby. The most sensational form of protest was the ceremonial destruction of a car, the most emotive enemy of urban air.[1] The Pollution Week demonstration, as it was labelled, was organised by students of veterinary medicine from the University of Helsinki. It was a manifestation of resentment towards urban air quality in the Finnish capital in the late 1960s.[2] This resentment was part of a wider phenomenon, in which the potential health effects of air pollution caused increasing concern in many European countries and in the United States. The Pollution Week concept itself was imitated from the United States. Thus, following a transnational trend, urban air pollution had become a topical environmental concern in Finland.

The Pollution Week demonstration was the first public protest against the misuse of the environment in Finland. Despite this, air pollution has received relatively little attention in Finnish environmental history. Historical works on public health and urban environment have examined changes in air quality in a

1. 'Kaasunaamariajelu ympäri Helsinkiä', *Helsingin Sanomat*, 24 April 1969.

2. Schönach 2008, pp. 17–80.

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few larger Finnish towns. They have shown how urban air quality represented a concrete and immediate environmental irritation for ordinary people.[3] However, it can be argued that forests, lakes and coastal waters form the essential arenas through which Finnish environmental history is depicted. Confined to a few major cities and industrial areas in a sparsely populated country, air pollution problems appear limited compared to the simultaneous degradation of forests and waters. The purpose of this chapter is to show, however, that concerns about air quality form an essential aspect of people's relationship towards the environment. Despite a low population density and relatively small industrial sector, concerns for clean air in Finland followed transnational trends that began with the hygiene movement in the early twentieth century. After the Second World War scientific analysis of the hazards of urban air became the primary way of evaluating urban air quality, paving the way for more nuanced concern about toxic substances in air. At the same time, the concern about urban air in the late 1960s was in many ways a continuation of older concerns about an unhealthy environment and the deleterious effects of civilisation.

Hygiene and the benefits of clean air

In the 1860s, Finnish botanist William Nylander made an observation that would later be regarded as pioneering in air pollution research. Although he was the professor of botany at the University of Helsinki, Nylander subsequently emigrated to France where he conducted his most important studies and gathered extensive collections of plants. Nylander's most important point of interest was lichen, the somewhat mysterious plant that seemed to be an ill fit in the botanical taxonomy. At the height of his scientific career in the 1860s, Nylander surveyed the distribution of different species of lichen in the streets of Paris. He observed that most species of lichen had degraded or vanished altogether from the urban areas, while they still thrived in parks and the outskirts of the city. This led Nylander to conclude that the air in urban areas had become unfit for lichen. Nylander proposed that lichen could be used as a sort of 'hygiomètre' that could measure the healthiness of air. The lichen showed, for example, that people in Paris should take their children to enjoy the air in the park of Luxembourg rather than in the streets of the city.[4] Nylander later made similar observations in Helsinki, indicating that the small northern town had similar issues with air quality. Nylander's views later became an example of

3. Kruut 1999; Harjula 2003; Schönach 2008; Mäkiranta 2022.

4. Nylander 1866, pp. 365–71.

an early warning about urban air pollution. He was cited by those who began to study urban air quality in Finland in the 1950s, and also by some Finnish historical studies on air pollution.[5]

However, a closer look at Nylander's study indicates that he was not particularly concerned about substances such as smoke and soot that are usually related to air pollution in industrialised cities. In fact, when one of Nylander's French colleagues proposed that the death of lichen could be caused by black soot from factory chimneys Nylander hesitated and pointed out that many species of lichen have black pigmentation naturally. Instead of smoke and soot, Nylander refers to impure and 'imprisoned' air in densely built environments. Lichens could not survive in these environments, Nylander explained, because they depended on the free circulation of air.[6] Rather than being an early warning about the health effects of air pollution that caused concern in the 1950s, Nylander's hygiomètre represents the mid-nineteenth century concern in Europe about stale air in the densely built and congested cities.

In the mid-nineteenth century, the prevailing hygienic thought saw cramped, dirty and stuffy urban environments as unhealthy and this view was backed up by the novel public health statistics. As Charles Rosenberg has argued, the idea that the urban environment was unhealthy compared to the countryside can be seen as an intuitive truth in the civilisation critique of the nineteenth century. The stuffy and dirty cities manifested the ill effects of progress and civilisation, while fresh air in the countryside provided a healthy sanctuary.[7] Although miasma theory as such was losing its place in hygienic thought, the importance of clean air retained its significance in the early twentieth century, both in Europe and in the United States.[8] In Finland, clean air became one of the essential features of the health education promoted by public health experts at the turn of the century.[9] Ideas of clean and fresh air persisted among Finnish medical experts even alongside germ theory, as air was one factor affecting the so-called susceptibility of individuals, which germ theory alone could not explain.[10] Thus, in early twentieth century Finland, air was an important aspect of environmental health grounded in the hygienic thought.

5. Hosiasluoma 2001, p. 196; Schönach 2008, p. 46.
6. Nylander 1866, pp. 365–71
7. Rosenberg 1998, p. 720.
8. Thorsheim 2006, p. 39.
9. Lehtonen 1995; Saarikangas 1998; Jauho 2007.
10. Jauho 2007, p. 95.

Failures of smoke abatement

The importance of clean air did not, however, translate into effective measures against polluted air. Although the scale of problems was different in Finland compared to industrial centres in Europe and the United States, Finnish urban dwellers were not spared the ill effects of modern society on their ambient air. Smoke from heating furnaces, trash incinerators, factories and to a growing extent automobiles caused nuisance to people living in urban centres such as Helsinki and Tampere.[11] The foul-smelling pulp industry formed the most widespread air pollution issue in rural industrial communities. Since the First World War, more diverse industrial activities were increasingly introduced to Finland, which also diversified the modes of air pollution. The copper industry in the small town of Harjavalta became the most infamous example of this rural air pollution that could destroy forests twenty kilometres from the factory.[12] To remedy the nuisance and to safeguard the healthiness of urban air, similar measures of abatement were adopted as were used widely in Europe. The primary forum was the municipal health boards established in the late nineteenth century following the British example. A smoke inspector was appointed in Helsinki in 1901, a system copied from Munich, but the office lasted only for a few years. Nuisance laws were also passed in the 1920s in order to curb foul smells from the pulp industry, but these laws were never used against major industries.[13]

In Finnish historical works on air pollution, the failure of air pollution control in the second half of the twentieth century has usually been seen to lie in an inability to prove that smoke and dust were dangerous to health and in the dominance of economic interests.[14] Both these arguments have their merits. The importance of air in hygienic thought was grounded more on vague ideas of healthy fresh air rather than any specific ill effects of smoke. As Finnish hygienic education shows, the direct health effects of these substances were regarded as questionable well into the mid-twentieth century.[15] It has even been argued that, in the smoke abatement movements in Europe and the United States, economic and aesthetic reasons came well before any health concerns.[16] Similarly, when Finnish industries adopted cleaning techniques from the United States in the

11. Schönach 2008; Harjula 2003.
12. Mäkiranta 2022, pp. 53–55.
13. Harjula 2003, p. 181.
14. Ibid.; Schönach 2008, p. 95; Lahtinen and Vuorisalo 2004, pp. 685–90.
15. Mäkiranta 2022, pp. 34–37.
16. Uekötter 2009, p. 44.

early twentieth century, it was mainly to avoid compensation demands from landowners and to prevent material waste.[17]

It could be argued that the hygienic concern for clean air was too vague and not powerful enough to instil real action that would have economic consequences. However, despite its vagueness, the hygienic idea was an essential aspect in the debate about urban space that was increasingly prominent in the twentieth century. Robert Jütte has shown how the complex questions about how cities should smell, look or sound were being renegotiated in the early decades of the twentieth century.[18] In Finland a turning point in this regard came in the late 1950s. As the hygienic concern about clean air challenged the state of affairs, officials responded in a way that would change not only the way air quality was managed but also the underlying concern about air quality.

Answering concerns with research

In the late 1950s, the real estate committee of the city of Helsinki received a complaint about dead trees in the district of North-Haaga. It was presumed that these trees had been killed by polluted air.[19] There was nothing new in the fact that trees and vegetation suffered from air pollution in urban and industrial surroundings. In the late 1940s and early 1950s, for example, Finnish chemical and metal industries had caused massive damage to forests in industrial towns. Local inhabitants had also been concerned over the potential effects on health, drawing similar conclusions to those of Nylander. Knowledge about air pollution had become more specific since the days of Nylander, however. Finnish medical experts were fairly certain that, although pollutants such as sulphur dioxide could kill trees, they were rather harmless to humans in the same amounts.[20] The link between plant life and healthy air did not hold such sway as it had done for Nylander.

However, the hygienic importance of clean air had not vanished from people's ideas of a healthy environment. While the complaints in small industrial towns amounted to little, the death of trees in the leafy North-Haaga was a different matter. This was a newly built neighbourhood surrounded by woods, inhabited by the health conscious urban middle class, and specifically designed to exclude the unwanted urban environmental elements that were seen as det-

17. Noro 1958, pp. 234–44.

18. Jütte 2018.

19. Record of the Realstate Committee, 31 March 1958, Helsinki City Archives.

20. Noro 1958, pp. 234–44.

rimental to health.[21] This middle-class enclave challenged the idea of what was the acceptable state of urban air. In a way, this serves as the Finnish equivalent of the well-known significance of middle-class resistance in twentieth century environmental history.[22] As Simo Laakkonen and Timo Vuorisalo have argued, members of the working class suffered the most from environmental pollution, but they also developed a somewhat fatalistic attitude on the issue that differed from that of the middle class.[23] Studies on Finnish industrial towns have also shown that the inhabitants valued local industries greatly and did not always make a noise even about clear hazards for health.[24]

Due to the complaints, the officials in Helsinki took action and they did it in a new way. Whereas complaints about air quality had previously been handed over to the city hygienist and public health board for evaluation, this time the committee decided to order a full investigation on the air quality of Helsinki. The Finnish Institute of Occupational Health(FIOH) was chosen to conduct the study. The study was applauded and closely covered by the press, with excited descriptions of the measuring apparatuses and their use.[25] Despite the attention it received, the study was not particularly important in itself. The results did not reveal anything special or alarming about the air quality of Helsinki and did not spur any immediate action. To be precise, it was not even the first investigation on air quality in Helsinki. It was actually preceded by a more limited and little noticed study by the Helsinki School of Technology a few years earlier.[26]

What is important in the FIOH investigation of 1959, however, is the fundamental change in urban air quality management that it depicts: the idea that scientific investigations on air quality could help to solve the problem. As Frank Uekötter has argued, this was a revolutionary change that took place first in the United States after the Second World War. Studies on air quality had been conducted before in many countries, but they had been sporadic. Systematic measurements were considered rather unnecessary, even by the most ardent anti-smoke activists.[27] The situation changed in United States from the late 1940s onward, as increasing complaints about urban air quality

21. Kolbe 2007, pp. 32–38.
22. See, for example, Sellers 2012.
23. Laakkonen and Vuorisalo 2019, pp. 288–90.
24. Lahti and Saarela, p. 309; Ahlberg, p. 61.
25. Schönach 2008, p. 152.
26. Kajanne and Laiho 1958.
27. Uekötter 2009, p. 129.

were answered with scientific research, which it was hoped would produce rational and objective solutions to the complex problem. The investigation on air quality in Helsinki, ordered by city officials, was the first indication that a similar faith in scientific expertise on air pollution was taking root in Finland.

After the FIOH study, the importance of research was further highlighted by the Smell Nuisance Committee established in Helsinki in 1960 to deal with complaints about trash incinerators. The committee applauded the study made in 1959 and urged municipal officials to order more studies from FIOH on air quality.[28] In 1965, a government expert advisory body on air pollution issues, led by FIOH personnel, was created. This cemented air quality research and expertise at the national level. The necessity of research was taking root outside Helsinki too. During the latter half of the decade, the FIOH conducted preliminary investigations in several towns and industrial areas.[29]

The pathogens in air

This new air pollution research had a somewhat different take on air compared to the older hygienic view. Methods and principles to study the health effects of urban air had roots in industrial toxicology and industrial hygiene, which had been focusing on non-microbial disease agents since the late nineteenth century. As Christopher Sellers has shown, it was in these disciplines that different dust and fumes were established in the early twentieth century as specific causes of disease. By the logic of 'the dose makes the poison' industrial toxicology could, at least in theory, deduce what kind of levels of different substances were harmful for health.[30] Armed with this kind of knowledge, industrial hygiene could then turn the situation around, and monitor the air inside factories in order to provide a safe working environment.

This industrial toxicological logic was adopted outside of factories when the management of environmental pollution became increasingly pertinent in the twentieth century. In Finland, the intimate connection between industrial environment and environment in general was epitomised by the fact that it was FIOH that became the national author in air pollution research, having

28. Report of the Smell Nuisance Committee to Helsinki City Council 23 Sept. 1966. Archives of the FIOH.

29. Studies were made in Turku (1966), Lappeenranta-Lauritsala (1967), Pori (1967–68), Kokkola (1966–67 and 1970–71), Rauma (1971), Tampere (1971), Valkeakoski (1971–72), Kuusankoski (1971–72), Karhula (1971), Mänttä (1971–72).

30. Sellers 1997.

first adopted the practice of industrial hygiene from United States.[31] Environmental historians have criticised the spread of industrial toxicology into other areas of environmental control. It has been seen as a reductionist approach that fails to consider the intricacies of environment and its relationship to health.[32] Linda Nash has argued, for example, that despite its interest in environmental pollution, post-World War Two toxicological research did not provide a return to the holistic relationship between human health and environment that was once a prevailing feature of medicine and still retained its place in lay people's views. On the contrary, research on environmental toxins reduced the question into measurement of quantity.[33]

Indeed it can be said that, from the point of view of air pollution research, the once important concept of clean air did not exist at all. Air was always a mixture of substances both natural and man-made. Since everything in air that deviated from the basic atmosphere could be considered impurity, the concept of clean air had little practical value in air pollution research. The essence of air pollution research was to analyse the different substances in air in order to determine which were harmful and in what quantities. In other words, the research was focused on the specific impurities in air and their specific effects. This was a marked shift from the vague but unquestioned hygienic idea about the benefits of clean and fresh air.

On the other hand, by framing the air quality issue as a toxicological puzzle, research on the health effects of air pollution specified the ill effects of polluted air into specific pathogens in air. To examine the specific effects of each substance in air became the overwhelming task of this new expertise. With this puzzle came also an elevated concern for the chronic effects of long-term exposure to polluted air. When the first international conferences on air pollution research were held in the early 1950s United States, many attendants saw the potential chronic effects as much more dangerous than occasional smog disasters in heavily polluted areas.[34] Chronic poisonings were known from occupational medicine, but little was known about the threat posed by normal urban air. The nascent threat of carcinogens was a further concern, about which little was known.[35] Thus, research on the health effects of air pollution

31. Mäkiranta 2022, pp. 55–59.

32. Nash 2008, pp. 650–55; Vaupel and Hombur 2019, p. 37; Jas 2015, pp. 52–53.

33. Nash 2008, pp. 650–55.

34. Kehoe 1952, p. 477; Phair 1956, pp. 3–10.

35. Hueper 1952, p. 30.

changed the vague notion of bad air into specific puzzle about the health effects of different substances.

There was, however, an epistemological off-balance in the methods to solve this puzzle. Even with the less than state-of-the-art equipment and laboratories of the FIOH, it was possible to analyse dozens of substances from Finnish urban air. Due to advances in analytical chemistry, even the elusive polycyclic hydrocarbons could be revealed in routine studies. The significance of these substances for public health was a more ambiguous matter. Although more sophisticated epidemiological studies had strengthened the link between urban air quality and various chronic respiratory diseases such as chronic bronchitis and lung cancer, the causal links between different substances and their effects were far from evident in the mid-1960s.[36] This had a marked effect on how the results of studies presented the issue. For example, after showing the multitude of substances, including carcinogens, in Finnish urban air, the FIOH's studies could only state that the quantities were in all likelihood too small to cause any danger to health.[37]

The new expertise on air pollution changed the way polluted air was depicted from vague notions of smoke and staleness to specific chemical substances. But the way the FIOH experts viewed the uncertainties and unknowns in the issue was not well received by the public. The first study in 1959 had been a novelty, but in the 1960s these air quality studies were increasingly criticised for ambiguous results and lack of real practical recommendations.[38] At the same time, attitudes against air pollution hardened, especially in Helsinki, where air quality decreased in the late 1960s due to the growing number of private cars. When this indignation was coupled with the rising environmentalist critique against the deleterious effects of industrial society in general, the toxicological view on air quality became the core of the new concern about urban air.

The environmentalist concern

Although Rachel Carson's *Silent Spring* is often touted as the herald of environmentalist thinking, many Finnish environmental historians have argued against this idea in the case of Finland. It has been shown, that despite its translation into Finnish in the early 1960s, the book provoked relatively little conversation and concern over pesticides was not regarded as important in Finland. Instead,

36. Heiman 1967, pp. 488–99.

37. Jormalainen, Laamanen and Lehtinen 1961, p. 152; Laamanen and Noro 1967, p. 16.

38. Schönach 2008, pp. 187–91.

the rising concern about environmental degradation was connected to multiple causes, both domestic and transnational. These developments created a situation in which people were concerned for their own immediate environment but at the same time linked these events into global ones that were made visible to the Finnish audience by newspapers and television.[39] The concern over urban air pollution appears to follow the same formula. The indignation about local ambient air quality was connected to urban air pollution problems in other countries and the pollution of the environment in general. This view is most evident in the pamphlet literature about environmental pollution that begun to proliferate in Finland during the late 1960s.

Perhaps most striking in the pamphlets was the specificity of concerns about different chemical substances in the air. This differed from complaints about smoke, dust and fumes that had been more or less regular in municipal public health boards in larger Finnish towns. It also differed from the concern over stuffy and stale air that had prevailed in nineteenth century hygienic thought. The hazard of urban air was now seen to lie in specific poisons such as carbon monoxide, hydrocarbons and lead. The pamphlets referred to the studies made by the FIOH and showed that in Helsinki the traffic alone produced 34,000 tons worth of carbon monoxide and 3,400 tons of hydrocarbons, while the quantity of lead in Finnish urban air had risen 800 per cent during the 1960s.[40] These substances were in turn feared for the specific health effects they had potential to cause. Lead and carcinogens were considered particularly worrisome, as they had the potential to cause long-term problems. Lead was known to accumulate in the environment and body. Hydrocarbons and other carcinogens were feared due to their potential to cause cancer and genetic mutations.[41] The Pollution Week protest in 1969 reproduced this same critical message by emphasising the quantities of specific pollutants and their hazards for health. In other words, the criticism about urban air quality was now more precise in terms of potential hazards and their causes than ever before.

The new critique also transcended the scale of the problem and laid it in a global context. The smog disasters in 1950s London, which had received little attention in Finland when they took place, were now presented as precedents and probable futures if nothing was done to remedy the situation. In these dystopian visions, people were forced to stay inside in ventilated spaces, use gas

39. Räsänen 2012, pp. 159–81.

40. Manula 1969, pp. 45–47.

41. Manula 1969, pp. 45–47; Valtiala 1969, pp. 19–45; Nordberg 1970, pp. 91–94.

masks or protect cities with ventilated domes.[42] The entire global atmosphere could even be doomed to be uninhabitable if the proliferation of cars and industrial production continued in populous developing countries.[43] More to the point, urban air pollution was not regarded as a separate public health issue. It was part of the anxiety about the overall destruction of the environment. Air pollution was one problem amongst a plethora of issues such as massive clear-cutting of forests, the pollution of coastal and inland waters, and drainage of marshlands.[44] Pollution was also connected to predictions about the rise of carbon dioxide in the atmosphere, which would eventually lead to warming of the global climate.[45] These issues were not merely simultaneous but also entangled, as they were seen to derive from the same pathological development in modern western society. The shift from vague concerns over smokes and fumes to chemical compounds in air also enabled the infusion of air pollution into wider concern over chemicalisation of the environment.

The new concern for air quality in Finland was dependent on local studies made by FIOH. These studies provided the numbers and facts that could be used to highlight local problems, but also to connect the state of local air with global developments. This did not mean, however, that the researchers were necessarily allies of the critics. The FIOH became a target of criticism despite its pioneering role in Finnish air pollution research. The institution's studies were heavily criticised while it itself was accused of protecting the interests of industry.[46] FIOH researchers argued that many of the concerns raised by the environmentalists were either unfounded or at least not acute in Finland. Often the same local studies were used by both parties to argue opposite points. While critics emphasised the sheer quantities of different toxic substances in air, FIOH researchers emphasised the toxicological principle that 'the dose makes a poison'. As the head of the institution argued, environment can handle reasonable pollution but not unreasonable.[47]

The different views were most evident in the case of lead poisoning. The health hazards of lead were well-known by the early twentieth century in occupational medicine, but, due to extensive studies indicating that it posed no danger in small doses, the use of tetraethyl lead in gasoline was approved

42. Manula 1969, p. 46; Valtiala 1969, p. 22.

43. Valtiala 1969, p. 20.

44. Ibid.; Pakkanen 1970.

45. Valtiala 1969, p. 32.

46. Launis 1972, p. 37.

47. Noro 1969, p. 126–30.

in the United States in the 1920s and its usage subsequently spread to other countries, including Finland.[48] In 1960, FIOH researchers stated in their report that there was no cause to believe tetraethyl lead in gasoline posed a danger to health.[49] The issue was invigorated again in the mid-1960s for various reasons. Geochemist Clair Patterson showed that the contamination of the environment from leaded fuel was considerably higher than had been previously estimated.[50] At the same time, the concern about lead contamination was given extra punch by the theory about the fall of the Roman Empire due to lead poisoning.[51] FIOH researchers attempted to mitigate these concerns and pointed to the weak evidence behind any claims about potential health effects. Critics saw the issue differently. Some regarded lead as a poison that slowly degenerated the human race through chronic diseases and genetic injuries. They also referred to American studies suggesting that increasing lead contamination could have an effect on precipitation and even alter the balance of the global climate.[52]

The attitudes of the FIOH researchers can be seen to depict the toxicological logic that Nash, for example, has criticised. It should be noted, however, that the new criticism was armed with the same knowledge and emphasis on quantities. By breaking urban air into numbers and chemical formulas, transnational air pollution research also provided the means for a new kind of critical rhetoric about urban air pollution in Finland, in which the quality of local air could be easily compared not only with other locales, but also with other aspects of the toxicity of the environment.

Air pollution as the new disease of civilisation

Uekötter has argued that fear about the health effects of air pollution in the late 1960s was a new phenomenon that differed, at least in the United States, from past attitudes and concerns.[53] It is easy to see similar novelty in the Finnish concern over urban air pollution in the late 1960s. The global scale of the concern, the fear of specific poisons and the alarmist rhetoric made the late 1960s a distinct period with regard to urban air pollution. On the other hand,

48. Warren 2019, pp. 105–20; Uekötter 2004, pp. 125–28.

49. Etylisoidun moottoripolttoaineen myrkyllisyys. Lausunto Esso Oy Ab:lle Helsingissä 26 Feb. 1960, Archives of the FIOH. Helsinki.

50. Warren 2019, pp. 115–26.

51. Gilfillan 1965, pp. 53–60.

52. Valtiala 1969, p. 32.

53. Uekötter 2009, p. 135.

the new criticism can also be seen to possess many continuities with older forms of concern over polluted air.

First of all, the new concern for air pollution can be seen as a continuation of the reductionist bacteriological view on health rather than adopting a more holistic point of view. As has been argued, the essential development in turn-of-the -century medicine was not that microbes cause diseases, but that diseases are entities defined by their causes.[54] This etiological point of view was also essential in industrial hygiene and toxicology as these defined diseases caused by specific chemicals.[55] It could be argued, then, that the late 1960s critics of air pollution were similar to the late nineteenth century hygienic movement when it embraced germ theory in order to specify its enemies from a plethora of vague notions about a dirty environment.[56] In the same way the 1960s health-conscious urban middle class embraced the view from industrial toxicology that could specify non-microbial concerns about the modern environment.

The result was also much the same. The fact that bacteria are everywhere meant that the hygiene movement had to focus on general cleanliness, despite having specified its enemies.[57] Similarly, the ubiquitous nature of toxic substances in a modern society was the fundamental enemy of the late 1960s critics. An essential feature of this rhetoric was that the modern world was thoroughly poisoned, as traces of potentially dangerous chemical components could be found almost anywhere – from atmosphere to foodstuffs. Although many experts on air pollution emphasised the need for mankind to adapt to the inevitable toxicity of modern world, critics called for action to turn the direction of society.

In other words, the late 1960s concern about urban air pollution had at its heart the same idea that had been at the core of nineteenth century concern about stale air in cities – namely the idea that progress and civilisation cause detrimental effects for humanity. As Rosenberg has argued, the anxiety over progress that had, in the nineteenth century, focused on cities was transferred into global and ecological thinking in the late twentieth century.[58] It should be added that what was essential in this transfer was the toxicological analysis of the environment. It was the nearly ubiquitous threat of toxins in the modern world that fuelled the concern over urban air quality in Helsinki, as well as

54. Carter 2017.

55. Sellers 1994, pp. 55–83.

56. Latour 1993.

57. Ibid.

58. Rosenberg 1998, p. 726.

Rachel Carson's concern about pesticides. As the Finnish pamphlets indicate, despite the global scale of the anxiety in the late 1960s, the modern city had not lost its place as a locus of anxiety even as civilisations' problems multiplied. In other words, rather than fundamentally changing, the concern over urban air in Finland had taken a new form whereby the intuitive concern over stuffy and dirty environments was replaced with a no less intuitive fear of toxins in the air.

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