

CONTAGION  
AND THE STATE  
IN EUROPE, 1830–1930

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*Preventive variations*

“One foot in the brothel, the other in the hospital,” goes the old saying, as applicable centuries ago as today. A universal for all mortals, disease is also an artifact of history. Patients racked by the fastigium of illness will take little comfort from the insight that they are suffering from a historical construct with only contingent objective reality, but scholars have found the multiplicity and mutability of illness irresistible.<sup>1</sup> This diversity of signification attached to disease itself holds equally for the means employed to prevent and contain its spread. Why such precautions, the prophylactic strategies adopted in hopes of avoiding or ameliorating the ravages of epidemics, have varied dramatically among nations even though, in biological terms, the problem faced by each has been much the same is the question in search of an answer. Medical history is the immediate subject, but the ultimate purposes of this study extend beyond the precisely scientific. Since at least the era of absolutism, preventing and dealing with contagious and epidemic disease have together been one of the major tasks of states.<sup>2</sup> When Cicero advised rulers to consider the *salus populi* as the highest law, he was thinking more of military security than sewers, but his dictum was soon to be interpreted as

<sup>1</sup> Charles Rosenberg and Janet Golden, eds., *Framing Disease: Studies in Cultural History* (New Brunswick, 1992); Jens Lachmund and Gunnar Stollberg, eds., *The Social Construction of Illness: Illness and Medical Knowledge in Past and Present* (Stuttgart, 1992); Keith Wailoo, *Drawing Blood: Technology and Disease Identity in Twentieth-Century America* (Baltimore, 1997); Paula A. Treichler, “AIDS, Homophobia, and Biomedical Discourse: An Epidemic of Signification,” in Douglas Crimp, ed., *AIDS: Cultural Analysis, Cultural Activism* (Cambridge, 1988), p. 69; Joseph Margolis, “The Concept of Disease,” *Journal of Medicine and Philosophy*, 1, 3 (September 1976); Peter Conrad and Joseph W. Schneider, *Deviance and Medicalization: From Badness to Sickness* (St. Louis, 1980), ch. 2. A truly untenable version, either trivial or false, is that of Andrew Cunningham, “Transforming Plague: The Laboratory and the Identity of Infectious Disease,” in Cunningham and Perry Williams, eds., *The Laboratory Revolution in Medicine* (Cambridge, 1992), pp. 238–44.

<sup>2</sup> George Rosen, *From Medical Police to Social Medicine* (New York, 1974), pp. 120ff.; Abram de Swaan, *In Care of the State: Health Care, Education and Welfare in Europe and the USA in the Modern Era* (New York, 1988), ch. 4; Marianne Rodenstein, “*Mehr Licht, mehr Luft*”: *Gesundheitskonzepte im Städtebau seit 1750* (Frankfurt, 1988), pp. 35–40.

a reference to the public health. Such protection is in many ways a classic public good, demanding a communal decision to require tickets of potential free riders: the quarantine evader whose personal convenience bodes collective catastrophe; the unvaccinated who, themselves benefiting from herd immunity, refuse to contribute to it; the tubercular who, failing to complete their prescribed medical regimen, spread an ever more resistant and virulent strain of bacillus. The dilemmas raised counterpose the rights of the individual to autonomy and freedom and the claims of the community to protection against the potential calamity threatened by its infectious members. They cast up the basic problem of reconciling individual and community in the most fundamental, pressing and unavoidable of terms.

An examination of the historical evolution of preventive techniques against contagious disease and their variation among nations therefore seeks to use public health to illuminate broader issues of state intervention. Taking epidemic control as its example, the question posed concerns the reasons for national differences not just in terms of hygiene, but also in broader realms of statutory intervention and control. In particular, the problem concerns the direction in which causality has worked. That political culture, a style of governance, the nature of a particular national state would leave their mark on the tactics applied to disease control seems intuitively obvious. The more interesting question concerns the extent to which, in fact, the dilemmas thrown up by the threat of epidemics were experiences that shaped and changed the style of statutory intervention. To mangle Clausewitz yet again, was prophylaxis a continuation of politics with other means or were politics shaped by the imperatives of prevention? What are the sources of the political traditions that are so often themselves invoked as final historical causes of variation between nations?

#### THE EPISTEMOLOGY OF EPIDEMICS

Sketched with a thumbnail, the history of understanding contagious disease has unfolded in a field of polar tension. On the one hand, certain illnesses (ophthalmia, smallpox, syphilis, phthisis and plague) have long been recognized as contagious, transmitted directly between humans, via touch or over short distances through the air, sometimes through the intermediation of objects or animals. The idea that disease can be communicated directly between humans was held already by the ancient Egyptians and Jews. The Book of Leviticus detailed rules for isolating

lepers and the concept of contagion became widely recognized in the Latin west with the acceptance of the Old Testament as a holy book of Christianity. In the early sixteenth century Fracastoro elaborated ideas of contagiousness for plague, smallpox, measles, tuberculosis, rabies and syphilis.<sup>3</sup>

On the other hand, a localist school of thought has long preached that disease, rather than spreading contagiously from one place to another, arose independently in each from various indigenous circumstances. The conditions in question have varied over the development of this strain of analysis with the emphasis shifting, broadly speaking, from natural to humanmade factors. Hippocrates and Galen formulated a miasmatic concept of disease involving an epidemic constitution of the atmosphere, corrupted by climatic, seasonal and astronomical influences. During the seventeenth century, Sydenham argued that epidemics were started by changes in the air resulting from emanations either from the earth's core or out in the universe. While such causes were largely beyond human influence, by the middle of the eighteenth century other environmental factors began to attract attention, ones that were potentially controllable. Miasmas arising from swamps and stagnant waters, filthy and crowded living conditions and the putrefaction of organic matter were all considered conspirators in the production of fevers.<sup>4</sup> But since, even given such general causes (whether exotic or environmental), not everyone was affected, another factor seemed necessary to explain why only some succumbed in epidemic circumstances: an individual predisposition that could be aggravated by fatigue, diet, habits, emotional strain and the like. With long historical precedence, immunology is the modern version of accounting for why, even given uniform contact with the sources of illness, morbidity varies individually.<sup>5</sup> The basic building blocks of etiological argument, from which in varying combinations conceptions of disease causation are constructed, have thus long been in place: a focus on environmental causes of various sorts, a recognition of the role played by individual predisposition and

<sup>3</sup> Charles-Edward Amory Winslow, *The Conquest of Epidemic Disease* (Princeton, 1944), pp. 73–74; Sven-Ove Arvidsson, "Epidemiologiska teorier under 1800-talets koleraepidemier," *Nordisk medicinhistorisk årsbok* (1971), p. 181; William Bulloch, *The History of Bacteriology* (London, 1938), p. 4; Robert P. Hudson, *Disease and Its Control* (Westport, 1983), p. 143; Harry Wain, *A History of Preventive Medicine* (Springfield, 1970), pp. 50, 96.

<sup>4</sup> James C. Riley, *The Eighteenth-Century Campaign to Avoid Disease* (New York, 1987), pp. ix–x, xv; Margaret Pelling, *Cholera, Fever and English Medicine 1825–1865* (Oxford, 1978), p. 18.

<sup>5</sup> Antoinette Stettler, "Die Vorstellungen von Ansteckung und Abwehr: Zur Geschichte der Immunitätslehre bis zur Zeit von Louis Pasteur," *Gesnerus*, 29 (1972).

an acknowledgment that at least certain diseases were contagious, transmitted from person to person, sometimes through the intermediation of objects or, as later recognized, other animals.<sup>6</sup>

In terms of preventive strategy, different etiologies had, broadly speaking, various implications. A view of disease as spread by contagion sought above all to break chains of transmission, interrupting the circulation of carriers by means of cordons, quarantines and sequestration. These were the techniques that we may generally call quarantinist, classically employed against leprosy, whose victims became the ultimate epidemiological outcasts. In German, the very name of the disease, *Aussatz*, indicates the social fate of its victims, set, as they were, outside the normal life of the community. For localists, in contrast, disease was best prevented by removing or correcting its environmental causes. As long as these were still seen as primarily atmospheric, climatic or astronomical, little could be accomplished. Once, however, the pertinent conditions had been narrowed to humanmade and individual factors in the proximate surroundings, something might be done about them. Localists sought to drain stagnant water, separate humans from their filth and excrement, build better housing, plan more hygienic cities, provide healthy food and warm clothing, encourage individuals to change their predisposing habits. Where the sun does not penetrate, as the old Persian proverb had it, the physician is a frequent visitor. Do not fixate on germs, Newman cautioned in 1930. “The essential thing is the healthy and resistant body of man, and the maintenance of his harmonious functioning in relation to Nature and his environment, and in relation to human society.”<sup>7</sup> In a broad sense we may call the prophylaxis associated with this social version of a localist etiology an environmental or sanitationist approach, an attempt to ameliorate the surrounding circumstances seen as causing illness. Where quarantinism sought to control people, as one observer has succinctly put it, environmentalism took aim at property.<sup>8</sup>

Individual predisposition, in turn, played a role in both preventive approaches, explaining why it was that any particular individual succumbed to disease, whether caused by a transmitted something or by the effect of local noxiousness. In sum, however, predisposing factors

<sup>6</sup> Winslow, *Conquest of Epidemic Disease*, pp. 73–74, 181; Charles E. Rosenberg, *Explaining Epidemics and Other Studies in the History of Medicine* (Cambridge, 1992), pp. 294–96.

<sup>7</sup> George Newman, *Health and Social Evolution* (London, 1931), p. 115.

<sup>8</sup> Gerry Kearns, “Private Property and Public Health Reform in England 1830–1870,” *Social Science and Medicine*, 26, 1 (1988), p. 188.

were of greater concern to environmentalists than quarantinists. Since the latter were concerned above all with breaking chains of transmission, the precise reason for the infectiousness of the victim in question, whether predisposed or not, was largely irrelevant for the precautions to be imposed. For the former, in contrast, attacking predisposing factors was an element of prevention. Some of these (deficient housing, impoverished diet, the stress and strain of market competition) could be ameliorated through the broad, communal social reform that preoccupied sanitationists. Others, however (bad habits, excess and immoderation, especially in matters sexual and dietary), were elements that required an individual change in behavior. The hope of effecting such modifications elicited the hectoring and moralizing side of sanitationist efforts, the ambitions to impose the standards of personal hygiene and moderate behavior characteristic of middle-class public health officials not only down the social scale, on lower classes feared as uncouth and insalubrious, but also upwards, on aristocrats often regarded as sexually promiscuous, gustatorially insatiable and morally suspect. From this preoccupation with individual predisposition sprang the Janus face of an environmentalist approach to disease, tergiversating between public and private goods: its socially reforming concern to assure even the poorest of basic sanitary infrastructure and decent living conditions; its socially controlling interest in making the circumspect and hygienic habits of the urban middle classes the standard to which all could be held.<sup>9</sup>

Like quarantinist techniques of disease prevention, an environmentalist approach too sports a venerable pedigree. The ancient Jews had been the first to develop not only the rules of contagionist prophylaxis detailed in Leviticus, but had also formulated other pertinent aspects of public hygiene: a weekly day of rest, protection of the food and water supply, concern with abnormal discharges of the genitals and more general bodily cleanliness, including perhaps (if one is willing to attribute also functional motives to religious rituals) circumcision. Hippocrates at Athens attempted to burn miasma out of the air by lighting pyres. The Romans built sewers and laid on water with an accomplishment that would take centuries to replicate. English regulations requiring the salubrity of the urban environment date from the late thirteenth century. The plague of the following century prompted renewed cleansings of

<sup>9</sup> Some of the most subtle and nuanced analysis in this respect is to be found in Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain, 1800–1854* (Cambridge, 1998), pp. 201–13 and *passim*.



public spaces, prohibitions on emptying cesspools and keeping pigs.<sup>10</sup> Starting in the fifteenth century, waste removal, sewerage and cleansing became part of a concerted public health program in central and northern Italy; indeed in Florence regulations on street cleaning and other sanitary measures were two centuries older. The Venetians had strictures governing a panoply of public health eventualities, from food to filth.<sup>11</sup> Environmentalist public works (draining land, street paving, sewerage) continued in a sustained fashion during the middle of the eighteenth century in other European nations. As a coherent current of public health, such attempts to improve local, and especially urban, conditions took root with the Enlightenment and then especially in the early nineteenth century, starting in France with the theories of Villermé.<sup>12</sup> In Germany, prominent sanitationists included Virchow and later Pettenkofer. As in so many things, while the French may have taken the intellectual lead, in practical terms they lagged and the baton was grasped by the British who, toward the middle of the century, began the process of urban improvement and hygienic reform that realized in its classic sense an environmentalist approach to epidemic disease. Drainage, sewerage, water filtration, zoning laws to separate work from residence and production from recreation, building codes to ensure sweetness and light, fresh air and elbow room: all were techniques brought to perfection in Britain during this period.<sup>13</sup> Under the leadership of Chadwick, Southwood Smith, John Simon and colleagues, a radical strain of environmentalist ideology evolved here that, attributing most disease to unpropitious local conditions, held out the possibility

<sup>10</sup> George Newman, *The Rise of Preventive Medicine* (Oxford, 1932), pp. 47–49; Arthur Newsholme, *Evolution of Preventive Medicine* (Baltimore, 1927), p. 57; John Simon, *English Sanitary Institutions* (London, 1890), p. 39; Karl Sudhoff, *Skizzen* (Leipzig, 1921), pp. 151–53; Jean-Noël Biraben, *Les hommes et la peste en France et dans les pays européens et méditerranéens* (Mouton, 1976), v. II, pp. 104, 178–79; Robert S. Gottfried, “Plague, Public Health and Medicine in Late Medieval England,” in Neithart Bulst and Robert Delort, eds., *Maladies et société (XIIe–XVIIIe siècles)* (Paris, 1989), pp. 348–59.

<sup>11</sup> Carlo M. Cipolla, *Miasmas and Disease: Public Health and the Environment in the Pre-Industrial Age* (New Haven, 1992), pp. 6–7; Carlo M. Cipolla, *Public Health and the Medical Profession in the Renaissance* (Cambridge, 1976), pp. 34–35; Ann G. Carmichael, *Plague and the Poor in Renaissance Florence* (Cambridge, 1986), pp. 96–97; Ernst Rodenwaldt, *Die Gesundheitsgesetzgebung des Magistrato della sanità Venedigs, 1486–1550* (Heidelberg, 1956).

<sup>12</sup> Riley, *Eighteenth-Century Campaign*, p. 102; Erwin H. Ackerknecht, “Hygiene in France, 1815–1848,” *BHM*, 22, 2 (March–April 1948), p. 141; Ann F. La Berge, *Mission and Method: The Early Nineteenth-Century French Public Health Movement* (Cambridge, 1992), pp. 96–97; John M. Eyler, *Victorian Social Medicine: The Ideas and Methods of William Farr* (Baltimore, 1979), p. 7; Laurence Brockliss and Colin Jones, *The Medical World of Early Modern France* (Oxford, 1997), pp. 750–60.

<sup>13</sup> As emblematic of a vast literature, see Anthony S. Wohl, *Endangered Lives: Public Health in Victorian Britain* (London, 1983).

that the problems of public health could, with one prolonged herculean effort, be solved simultaneously and in much the same way as those of poverty and general social iniquity: through the rebuilding of the urban environment as a well-planned, -plumbed, -lit and -ventilated city, by means of improvements in the living conditions of the poor.

The quarantinist approach, in the meantime, did not pass away in the face of this totalizing utopian sanitary vision. While certain illnesses were generally conceded to be transmissible, doubts voiced early in the nineteenth century concerning plague and yellow fever acquired critical mass when, in the 1830s, the cholera epidemics ravaging western Europe did not appear to spread solely by means of personal contact. During the heyday of an environmentalist stance (at midcentury in France, in Britain with Chadwick, Germany under Pettenkoferian sway) contagionism was seen as an outmoded, oldfashioned and conservative approach to disease that denied its obvious causes in filth and squalor, preferring to lock victims in lazarettos rather than improve their living conditions. But far from vanishing, contagionism celebrated a triumphant return with the bacteriological revolution at the end of the century when Pasteur, Koch and others vindicated the insight that much disease, caused by specific microorganisms, was often transmitted among humans and that, whatever the effects of predisposing factors, however detrimental filth and unfortunate poverty, certain illnesses spread independently of social and local circumstances, requiring therefore precautions other than the mop and bucket full of soapy water and good intentions wielded by the sanitationists.

A strictly binary view of either etiology (localism vs. contagionism) or prophylaxis (sanitationism vs. quarantinism) would, however, be a distortion. These three basic building blocks of epidemiological theory (local factors, whether natural or social, individual predisposition and contagion) were multiply and mutually permeable.<sup>14</sup> Miasmas could be regarded as localist, contagionist or both, seen as emanations produced by environmental causes, other times as the vehicle by which disease spread from one place to another.<sup>15</sup> The fact that physicians attending

<sup>14</sup> Christopher Hamlin, "Predisposing Causes and Public Health in Early Nineteenth-Century Medical Thought," *Social History of Medicine*, 5, 1 (April 1992), pp. 46–49.

<sup>15</sup> In the late eighteenth century, for example, VD, clearly recognized as transmissible from person to person, was thought to be carried by micro-miasmas from one set of genitals to the next: Johann Valentin Müller, *Praktisches Handbuch der medicinischen Galanteriekrankheiten* (Marburg, 1788), pp. 29–31, 67. Yellow fever in the 1860s was regarded as imported, but not contagious, as arising from a specific miasma, not generally from filth or fouled air: William Coleman, *Yellow Fever in the North: The Methods of Early Epidemiology* (Madison, 1987), pp. 23, 55.

the ill were also stricken with typhus, as Virchow reasoned in 1848, could equally well prove that the disease was of local origin (doctor and patient afflicted by the same factors) as show that it was contagious.<sup>16</sup> Individual predisposition was a factor of interest both to localists and contagionists, explaining in either scheme why not everyone succumbed even in the worst of epidemics. Nor was bacteriology, which disproved the fundamental assumption of the most fervent sanitationist creed, that epidemic disease arose of virgin birth each time anew, irreconcilable with other devoutly held localist beliefs. Bacteriology showed environmentalists in what respect they had been right, how it was that filth, though not a cause per se of disease, might favor its multiplication and spread, why in fact it was right to locate the outhouse far from the well.<sup>17</sup> Bacteriologists and sanitationists could readily agree that unhygienic conditions promoted the spread of disease, even though the latter saw filth itself as the generator of disease, the former regarding it mediately as a condition favorable to propagating the microorganisms ultimately responsible for illness.<sup>18</sup> If hygienic reform eliminated malevolent microorganisms, as with Koch's insistence on water filtration to solve Hamburg's cholera problem, then sanitarians and contagionists were in perfect harmony. Dietary excess could be a predisposing factor in both views, whether because of a general weakening of resistance for sanitationists or a neutralizing of the stomach acidity necessary to kill microorganisms for their opponents.<sup>19</sup> Overcrowding was an insalubrious condition, much lamented by environmentalists, which bacteriologists had reasons consistent with their etiological position (ease of vector transfer) to regard as conducive to the spread of disease.<sup>20</sup> Promiscuity, all could agree, was a factor in the dissemination of venereal disease, although only some thought it also a cause. Both sides could favor removing cholera victims from their abode, whether the reasoning was to prevent germs from spreading or to allow noxious domestic atmospheres to dissipate. Both considered disinfection, fumigation and cleansing effective prophylaxis, either because the contagium was thus destroyed or because putrefac-

<sup>16</sup> Rudolf Virchow, *Collected Essays on Public Health and Epidemiology* (Canton, 1985), v. I, pp. 276–78, 340–41.

<sup>17</sup> Hudson, *Disease and Its Control*, p. 188; Wolfgang Locher, "Pettenkofer and Epidemiology: Erroneous Concepts – Beneficial Results," in Yosio Kawakita et al., eds., *History of Epidemiology* (Tokyo, 1993).

<sup>18</sup> *Sanitary Record*, 1 (26 September 1874), pp. 229–31; Carl Barriés, *Die Cholera morbus* (Hamburg, 1831), pp. 68–69, 238ff. <sup>19</sup> *Hygiea*, 55, 6 (June 1893), pp. 609–23.

<sup>20</sup> As Richard Thorne Thorne pointed out for smallpox: *First Report of the Royal Commission Appointed to Inquire into the Subject of Vaccination* (C.-5845) (London, 1889), QQ 764, 770.

tion and pestilential emanations were neutralized.<sup>21</sup> Both could advocate isolation of the ill, either to break chains of transmission, or as a kind of purification of the population.<sup>22</sup>

Environmentalists were often willing to concede that diseases originally arising from local causes (and even the most ardent contagionist without an intergalactic approach had to admit that all must ultimately have started somewhere for reasons other than importation) might attain a degree of virulence rendering them transmissible.<sup>23</sup> Localism and contagionism were regarded by many as compatible.<sup>24</sup> Disease might arise locally, but could then be transmitted; whatever its origin, contagious illness often struck differentially depending on predisposing factors. Infectionism and contingent contagionism were terms used for such formulations of the interdependence of contagion and local factors.<sup>25</sup> Contagionism and localism were thus two poles in a field of intellectual tension within which any individual position took its stance. While absolute contagionists and localists, convinced quarantinists and sanitationists, could be found, most observers fell somewhere between the extremes. Nonetheless, without reifying the concepts and anachronistically fixing in time concepts that have never, of course, stood outside the flux of historical development, it remains the case that a crucial distinction persists over the *longue durée* of western thinking about diseases and their causes that can and should not be effaced by attempts to render nuanced and more subtle otherwise overly stark dichotomies. Just as the myths of Hygeia and Asclepius, the ideals of prevention and cure, the approaches of “ecology” and “engineering,” have identified two polar medical ambitions over centuries, so too a closely related distinction has been drawn, etiologically speaking, between a focus on the environmental background of epidemic disease and its transmissibility among humans; prophylactically, between attempts to ameliorate toxic surroundings and limiting contagious spread.<sup>26</sup> The remedy, says the

<sup>21</sup> R. J. Morris, *Cholera 1832: The Social Response to an Epidemic* (New York, 1976), p. 174.

<sup>22</sup> Lloyd G. Stevenson, “Science down the Drain: On the Hostility of Certain Sanitarians to Animal Experimentation, Bacteriology and Immunology,” *BHM*, 29, 1 (January–February 1955), p. 9.

<sup>23</sup> *Gazette médicale de Paris*, 3, 15 (1832), p. 155; 3, 74 (1832), p. 516; Rudolph Wagner, *Die weltgeschichtliche Entwicklung der epidemischen und contagiösen Krankheiten und die Gesetze ihrer Verbreitung* (Würzburg, 1826), p. 10; Martha L. Hildreth, *Doctors, Bureaucrats, and Public Health in France, 1888–1902* (New York, 1987), pp. 114–17; Hamlin, “Predisposing Causes and Public Health,” p. 47.

<sup>24</sup> L. Pappenheim, *Handbuch der Sanitäts-Polizei* (2nd edn.; Berlin, 1870), v. II, p. 154; Hermann Eulenberg, ed., *Handbuch des öffentlichen Gesundheitswesens* (Berlin, 1881), v. I, p. 511; *PP* 1866 (3645) xxxiii, p. 455.

<sup>25</sup> Hudson, *Disease and Its Control*, p. 142.

<sup>26</sup> Rene Dubos, *Mirage of Health* (New York, 1959), ch. 5; John Powles, “On the Limitations of Modern Medicine,” *Science, Medicine and Man*, 1 (1973), p. 25.

physician in Bricux's *Damaged Goods*, speaking of tuberculosis and summing up the dichotomy, is to pay decent wages and tear down sub-standard housing, but instead workers are advised not to spit.

#### THE POLITICS OF PUBLIC HEALTH

How to prevent and protect against contagious disease is a problem that invokes some of the most fundamental and perduring dilemmas in the contradiction between individual rights and the demands of society, between (most starkly) the claim to personal corporeal integrity and the authority of the community to ensure the health of its members.<sup>27</sup> To what extent may society protect itself against individuals whose misfortune to be stricken with a transmissible ailment poses a threat to others? Contagious disease has accordingly raised issues that go beyond the epidemiological to become political. The spirit of partisanship, as one early observer of cholera put it, burns with almost the same ferocity on topics medical as political, while others extended the comparison even to the ticklish realm of theology.<sup>28</sup>

One might be forgiven for considering the prevention of contagious disease a question of medical technique. Faced with a biologically identical problem, each nation could be expected to resort to similar preventive measures, ones dictated by the state of etiological knowledge. In fact, variations in prophylactic strategies employed by different nations have been remarkably pronounced. Before the bacteriological revolution this was perhaps less surprising. With no single accepted scientific guide to follow, nations were free to choose preventive tactics according to other criteria. But such divergences persisted, indeed in many respects sharpened, during the era when, scientifically speaking, general agreement had been wrought on the etiological bases of at least the classic contagious diseases.

For the early phases of cholera (up to the 1850s), for example, the extremes were defined by, on the one hand, the strict quarantinist practices (sealing borders, isolating travelers, sequestering the sick and generally seeking to break chains of transmission in much the way traditionally employed against the plague) imposed in Russia, Austria and Prussia and, on the other, the sanitationist approach eventually adopted in Britain and, for the time being, France (allowing unrestricted movement of

<sup>27</sup> Jean-Marie Auby, *Le droit de la santé* (Paris, 1981), p. 24.

<sup>28</sup> Bisset Hawkins, *History of the Epidemic Spasmodic Cholera of Russia* (London, 1831), p. 154; *Westminster Review*, 2 (1825), pp. 135–36.

goods and travelers, but seeking instead to render salubrious the filthy circumstances still considered the main cause of this and other epidemic diseases). Even once the cause of cholera became known, the bacteriological revolution having leveled the playing field of knowledge, stark differences in approach persisted. By the 1890s, however, the nations facing off in prophylactic contest had shifted to ally the Germans with the British, together opposing the French who had in the meantime hoisted the banner of quarantinism, now insisting on strict measures to be imposed at the epidemiological bottleneck in the Middle East.

With the other diseases under the glass here, differences in national preventive strategies were even more clearcut. For smallpox, the extremes varied between the compulsory system of universal vaccination and revaccination of all citizens imposed in Germany, eventually France and, for a while, Sweden and the British government's inability to maintain similarly strict measures in the face of widespread protest, its adoption instead of a purely voluntary approach. For syphilis, the contrast was triangular, among (1) the regulation of prostitution found in France and Germany that was considered sufficient to control VD, (2) the British policy (once the Contagious Disease Acts, a form of regulationism, had been repealed in the late 1880s) of largely ignoring the problem of prostitution and instead applying the principles of voluntary treatment to such illness and (3) the Scandinavian solution of ending regulation, but in turn obliging all infected citizens to undergo compulsory treatment, threatening those who refused with forced hospitalization. Even in our own day of scientific globalization, precautions used against the AIDS epidemic have varied dramatically among nations, with the extremes represented by the hyperquarantinism (testing all foreigners and returning nationals for HIV, quarantining seropositives) of nations like Cuba, China and Iran, at one end, and the benign laissez-faire approach (providing medical care and education, but otherwise rattling few prophylactic sabers) of the Dutch and British at the other.

Why have different states adopted such divergent prophylactic strategies in the face of similar epidemiological problems? Variations in national temperament, habit and custom have been proposed – a plausible, but unsatisfying answer in its vague generality.<sup>29</sup> One of the most

<sup>29</sup> John Cross, *A History of the Variolous Epidemic which occurred in Norwich in the Year 1819, and destroyed 530 Individuals, with an Estimate of the Protection afforded by Vaccination* (London, 1820), p. 220; *Bulletin de la Société de médecine publique et d'hygiène professionnelle*, 2 (1879), pp. 328–34; *Wiener Medizinische Presse*, 10 (1869), col. 1129; Pierre Darmon, *La longue traque de la variole: Les pionniers de la médecine préventive* (Paris, 1986), p. 383; Claude Quérel, *History of Syphilis* (Baltimore, 1990), p. 7.

powerful explanations suggests a close connection between a nation's political system and culture and the approach it takes to contagious disease, a correlation, in other words, between politics and prophylaxis. Erwin Ackerknecht formulated this idea most notably, arguing that sanitary cordons, quarantines, sequestration and other measures of the sort traditionally marshaled against contagious disease, which necessarily impinged on the individual's autonomy, giving priority to the interests of the community and the state, were most likely to be favored by absolutist, autocratic or conservative regimes.<sup>30</sup> In contrast, more liberal, democratic systems, reluctant to interfere with individual freedom, sought less intrusive strategies, usually some variety of environmentalism, or, in default, preferred to forego preventive interventions altogether. Economically speaking, the contrast was between commercial and trading interests, hoping to avoid quarantinist restrictions, and the mercantilist state bureaucracies for whom free trade and private profitability were but secondary considerations to be weighed against the nation's demographic, military and public health concerns. Because, during the first half of the nineteenth century, the scientific weight was too equally balanced between both sides of the argument for a clear intellectual preponderance in any one direction, other factors – social, economic and political – tilted the scales in each nation for or against a quarantinist approach.

In Ackerknecht's scheme, etiology, prophylaxis and politics were elegantly and powerfully correlated with each other. An autocratic ideology favored a view of epidemic diseases as contagious and consequently applied quarantinist tactics. Liberals, in contrast, approached the issue from some variety of localist perspective, especially concerned with social problems (poor waste removal, drainage, tainted water, noxious vapors, inadequate housing), and sought to prevent disease by correcting deficiencies of the environment through hygienic reform. Quarantinism, in this view, was authoritarian and interventionist in a drastic and imposing sense, legitimating the state's right to infringe on its subjects' liberties by invoking a higher good, posing a zero-sum tradeoff between individual and public weals. Sanitationism, in contrast, suited the desires of liberal polities not to interfere unnecessarily in the life of the individual, offering an approach to disease prevention that not only left civil

<sup>30</sup> Erwin H. Ackerknecht, "Anticontagionism Between 1821 and 1867," *BHM*, 22, 5 (September–October 1948); Erwin H. Ackerknecht, *Medicine at the Paris Hospital 1794–1848* (Baltimore, 1967), pp. 156–57. He was following the cue given by Sigerist who distinguished broadly between absolutist and liberal styles of public health: Henry E. Sigerist, *Civilization and Disease* (Ithaca, 1944), p. 91.

society comparatively unhampered, but also identified the best means of prophylaxis as social and hygienic reform. Because of this elegant fit between political system and public health, the choice of preventive strategy was dictated – so the implication of Ackerknecht’s argument – at least as much by politics as biology. It was not the nature of the disease which specified how it would be prevented and limited, but the kind of political regime under epidemic attack.

At its most messianic, environmentalism rose from a merely prophylactic technique to become part of a complete worldview, a belief that filth, disease and sin were but various manifestations of the same maleficent principle. In social terms its precepts dictated a total program of thoroughgoing reform. It was not filth or overcrowding, as in a narrow Chadwickian accounting, which caused or predisposed to disease, but poverty in the broadest sense (long hours, exhausting labor, low wages and the dingy routine following in their train) that, grinding down the health of the poorest, left them susceptible to affliction. Whereas a narrowly sanitationist approach offered technical solutions to disease prevention – drainage, ventilation, sewerage and the like – its broader formulation would rest satisfied with nothing less than reform on a scale promising the poor social and therefore epidemiological circumstances comparable to the middle and upper classes: fresh air, unadulterated food, potable water, dwellings of light, cleanliness and space.<sup>31</sup> Hygienic reform thus held out the opportunity not only of checking the spread of (what were considered to be) filth diseases, but also, in the long run, of improving the lives of those who had suffered most from industrial urbanization. Virchow formulated this mutual inflection of social and sanitary reform in his slogan, “Medicine is a social science and politics nothing but medicine on a grand scale.” Free and unlimited democracy was his remedy for epidemic disease.<sup>32</sup> G. B. Shaw espoused a view that combined sanitation and socialism, measures to improve the circumstances of the worst-off rather than technical stopgap interventions by a professional medical caste to patch up the status quo.<sup>33</sup> In international terms, an environmentalist approach

<sup>31</sup> Stevenson, “Science down the Drain,” pp. 2ff.; B. L. Hutchins, *The Public Health Agitation 1833–1848* (London, 1909), p. 84; A. J. Youngson, *The Scientific Revolution in Victorian Medicine* (New York, 1979), p. 22; La Berge, *Mission and Method*, pp. 96–97; John V. Pickstone, “Dearth, Dirt and Fever Epidemics: Rewriting the History of British ‘Public Health,’ 1780–1850,” in Terence Ranger and Paul Slack, eds., *Epidemics and Ideas* (Cambridge, 1992), p. 126; Hamlin, *Public Health and Social Justice*, pp. 186–87.

<sup>32</sup> Rosen, *From Medical Police*, p. 62; Virchow, *Collected Essays*, v. I, pp. 307–15.

<sup>33</sup> Roger Boxill, *Shaw and the Doctors* (New York, 1969), p. 66.



promised to unite nations, superseding distinctions drawn by quarantinists between the sources and the victims of infection, between healthy and filthy countries. With the gradual spread of the principles of public hygiene back to the Orient, where they had originated in the first place, the human family would no longer be divided by fears of contagion into mutually antagonistic epidemiological blocs.<sup>34</sup> As a measure of this total and comprehensive vision espoused by environmentalism at its loftiest, one may take its all-or-nothing view of reducing mortality in what was known as the “displacement theory.”<sup>35</sup> Attempts at reducing the damage due to any particular disease (vaccination for smallpox was among the best-rehearsed examples) were futile since, even if effective, other ailments would fill the gap, the vaccinated carried off instead by, say, typhoid or measles.<sup>36</sup> Unless all diseases were prevented simultaneously through hygienic reform, measures targeted at specific illnesses were pointless. What counted was the overall mortality rate, not of this or that ailment.<sup>37</sup> By attacking fundamentally unhealthy living conditions, all (or at least many) diseases would be prevented. Sanitationism in its heyday was thus a totalizing, unified view of etiology and prophylaxis, standing in stark contrast to the contagionist and eventually bacteriological approach that regarded each ailment as having its own particular cause, specific cure and form of prevention, however much generally squalid circumstances might favor transmission and sickness.

From the environmentalist vantage, hygienic reform involved no costly tradeoffs between the interests of the individual and the community, both standing to gain from such improvements. This wholly benign sanitationist self-image was captured by John Hamett, friend of the British consul at Danzig<sup>38</sup> during the first cholera epidemic, who thought that the disease, caused through atmospheric contamination,

<sup>34</sup> *Conférence 1851*, 39, pp. 9–14.

<sup>35</sup> Bernhard J. Stern, *Should We Be Vaccinated? A Survey of the Controversy in Its Historical and Scientific Aspects* (New York, 1927), p. 51.

<sup>36</sup> William Tebb, *Compulsory Vaccination in England: With Incidental References to Foreign States* (London, 1884), pp. 61–62; *Vaccination Inquirer and Health Review*, 7, 78 (September 1885), p. 95; *Hansard*, 1871, v. 208, col. 1715; 1883, v. 280, col. 992; *La médecine contemporaine* 21 (1880), pp. 147–52; P. A. Siljeström, *A Momentous Education Question for the Consideration of Parents and Others Who Desire the Well-Being of the Rising Generation* (London, 1882), pp. 10–17; *Förhandlingar* (1908), p. 226; Jno. Pickering, *Anti-Vaccination: The Statistics of the Medical Officers to the Leeds Small-Pox Hospital Exposed and Refuted* (Leeds, 1876), pp. 32–34.

<sup>37</sup> William White, *The Story of a Great Delusion* (London, 1885), pp. xxxiv, 450–51; *Bihang*, 1885, 1 Saml., 2 Afdl., v. 2/13, no. 79.

<sup>38</sup> In the interest of avoiding anachronism, generally speaking, place names used by the contemporary sources are employed here.

was best counteracted by cleaning the homes of the poor, keeping victims warm and providing timely medical assistance – in other words, in a phrase that immortalizes the fuzziest sort of sanitationism, preventing cholera “by comfort, consequent cheerfulness, cleanliness, dryness, and ventilation.”<sup>39</sup> Quarantinists, in contrast, prided themselves on being hardnosed realists. They did not oppose social and hygienic reform, but considered such matters distinct from the more immediately pressing issue of checking the ravages of contagious disease. Citizens could be spared the worst effects of epidemics without first having to rebuild the urban environment; effective prophylaxis was possible without the inevitable delay and expense of major social reform. Pasteur himself put the position most baldly with his claim, “whatever the poverty, never will it breed disease.”<sup>40</sup> Quarantinists were generally willing to concede that unhygienic living conditions fostered the spread of illness and were not, in the sense of the sanitationists’ withering caricature, a filthy party. But since such diseases were conveyed by contagion, filth was not the immediate problem. It may be an exaggeration to claim that general urban salubrity is without significance, as one quarantinist put it with respect to cholera, but it is common knowledge that some of the cleanest cities are hard hit while dirty ones are spared.<sup>41</sup> Mortality from epidemic disease and insanitary circumstances were only mediately connected. Much more urgent than improving urban living conditions, and an attainable goal to boot, was to impose cordoning, quarantining, notification, isolation, disinfection and similar precautions that made up the quarantinist palette of remedies. That this involved some limitation of personal liberties was no secret, but the public good was seen to far outweigh the restrictions thereby imposed on individual citizens.

#### ETIOLOGICAL DUALITIES

Ackerknecht’s own formulation of a prophylactic dichotomy between conservative quarantinism and liberal sanitationism was little more than a suggestion. He has, moreover, been justly criticized for an overly manichean division, on the question of nineteenth-century cholera etiology,

<sup>39</sup> John Hamett, *The Substance of the Official Medical Reports upon the epidemic called Cholera, which prevailed among the poor at Dantzick, between the end of May and the first part of September, 1831* (London, 1832), p. 189.

<sup>40</sup> Paul Weindling, ed., *International Health Organisations and Movements, 1918–1939* (Cambridge, 1995), p. 253. The equivalent claim by Koch is quoted in Georges Vigarello, *Le sain et le malsain* (Paris, 1993), p. 257. <sup>41</sup> Paul Bert, *Le choléra: Lettres au “Tagblatt” de Vienne* (Paris, 1884), p. 19.

into contagionists and localists.<sup>42</sup> Nonetheless, if we pass from the narrow issue of etiology to the broader one of basic and perduring differences in public health strategies, his fundamental idea of a connection between political ideology and preventive tactics has proven enormously fruitful, widely accepted and, indeed, often implicitly assumed by many observers. Even though British medical opinion may not have been divided into camps of contagionists and miasmatisms as resolutely at war with each other as Ackerknecht believed, it is still the case, and by far the more interesting issue for a comparative view, that Britain as a whole took a preventive public health approach more informed by anti-contagionist assumptions than was true on the continent. More importantly from the vantage of this book, however diffuse the etiological dualities may in fact have been, the prophylactic juxtapositions, seen at the level of broad national strategies, were much more crisply binary: quarantinism vs. sanitationism, compulsory vs. voluntary vaccination, regulation of prostitution vs. alternate techniques.<sup>43</sup> Ackerknecht's idea of the causes of such divergence has had an impact for reasons that, not justified by his own intellectual investment, rests on a knack for bringing to the fore political correlations of a deeper and enduring conceptual dichotomy between localist and contagionist approaches to disease. If this split has not been quite a Lovejoyian unit idea, it has informed thinking about disease and its prevention for centuries.

At its broadest, this etiological distinction separates, on the one hand, a view of disease as an imbalance between humans and the environment whose prevention requires a reequilibration from an understanding, on the other, of illness as the outcome of a specific external attack on the

<sup>42</sup> Pelling, *Cholera, Fever and English Medicine*, pp. 295–310; Margaret Pelling, "The Reality of Anticontagionism: Theories of Epidemic Disease in the Early Nineteenth Century," *Society for the Social History of Medicine: Bulletin*, 17 (1976), pp. 5–7; Roger Cooter, "Anticontagionism and History's Medical Record," in Peter Wright and Andrew Treacher, eds., *The Problem of Medical Knowledge* (Edinburgh, 1982), pp. 87–93; La Berge, *Mission and Method*, pp. 95–98; Roy Porter, "Cleaning up the Great Wen: Public Health in Eighteenth-Century London," in W. F. Bynum and Roy Porter, eds., *Living and Dying in London* (London, 1991), pp. 70–71; Coleman, *Yellow Fever in the North*, pp. 187–94; Hamlin, "Predisposing Causes and Public Health," p. 46; John B. Blake, "Yellow Fever in Eighteenth-Century America," *Bulletin of the New York Academy of Medicine*, 2/44, 6 (June 1968), pp. 680–82; Michael Dormann, "'Das asiatische Ungeheuer': Die Cholera im 19. Jahrhundert," in Hans Wilderott and Michael Dormann, eds., *Das grosse Sterben: Seuchen machen Geschichte* (Berlin, 1995), p. 215; Michael Stolberg, *Die Cholera im Grossherzogtum Toskana* (Landsberg, 1995), p. 51; Hamlin, *Public Health and Social Justice*, pp. 62–66.

<sup>43</sup> Antagonism between clearly articulated sanitationist and contagionist positions seems to have been a constant of nineteenth-century public health development in the United States: John Duffy, *The Sanitarians: A History of American Public Health* (Urbana, 1990), pp. 108, 129, 166, 206; Howard Markel, *Quarantine! East European Jewish Immigrants and the New York City Epidemics of 1892* (Baltimore, 1997), pp. 154–58.

autonomous integrity of the body which, if not preventable (by vaccination) or curable through various targeted medical manipulations, can at least be rendered innocuous, from the community's point of view, by ensuring that the victim does not infect others. In the first instance, disease is an imbalance that can be righted or avoided only by reinstating the original harmony. In its older theological version, one that continues in good health, illness is divine punishment for moral or theological transgression, rectified by ending the behavior that had merited retribution in the first place.<sup>44</sup> The Bible mentions leprosy and plague as instances of such punishment and it was common to include prayer and repentance among the tactics used in hopes of avoiding or mitigating illness. During the plagues of the sixteenth century, however, theology and science had begun pursuing different avenues of explanation and London clergy were officially enjoined from preaching a supernatural approach to a disease officially understood to be infectious and all too worldly.<sup>45</sup> By the time of yellow fever and cholera in the early nineteenth century, the moral element had faded for the classic contagious ailments, while it has remained strong for sexually transmitted diseases, from syphilis to AIDS.

In the secularized version of this theory, disease was a disharmony between humans and the natural world, with filth substituting for sin and sewerage replacing atonement. In some variants, disease was itself the act of reestablishing harmony, the means by which the body was repaired.<sup>46</sup> Smallpox, for example, was still regarded in the late eighteenth century as an act of cleansing by which poisons were expelled through special glands intended for this purpose.<sup>47</sup> Such noxious effluvia were an inherent part of the human condition, a form of epidemiological original sin. In this disequilibrium view, cure and any other form of targeted preventive manipulations were suspect. Cure was an attempt to circumvent

<sup>44</sup> Wolf von Siebenthal, *Krankheit als Folge der Sünde* (Hannover, n.d. [1950]); Walther Riese, *The Conception of Disease* (New York, 1953), pp. 14–19; Keith Thomas, "Health and Morality in Early Modern England," in Allan M. Brandt and Paul Rozin, eds., *Morality and Health* (New York, 1997), p. 16.

<sup>45</sup> Owsei Temkin, *The Double Face of Janus* (Baltimore, 1977), p. 458; Paul Slack, *The Impact of Plague in Tudor and Stuart England* (London, 1985), p. 29; L. Fabian Hirst, *The Conquest of Plague* (Oxford, 1953), p. 15.

<sup>46</sup> Florence Nightingale, *Notes on Nursing* (Edinburgh, 1980), p. 1; Owsei Temkin, "The Scientific Approach to Disease: Specific Entity and Individual Sickness," in A. C. Crombie, ed., *Scientific Change* (London, 1963), p. 632; Rosenberg, *Explaining Epidemics*, p. 94.

<sup>47</sup> Christian August Struve, *Anleitung zur Kenntniss und Impfung der Kuhpocken* (Breslau, 1802), p. 84; "Belehrung über ansteckende Krankheiten," *Anhang zur Gesetz-Sammlung*, 1835, Beilage B zu No. 27 gehörig, pp. 26–27; Otto Lentz and H. A. Gins, eds., *Handbuch der Pockenbekämpfung und Impfung* (Berlin, 1927), p. 673.

reharmonization, while true recuperation came from the body itself and, at most, needed to be encouraged and stimulated. Cures could not be attacks from without, injections of foreign substances, administerings of drugs or any of the other violations of basic bodily integrity inflicted by allopathic medicine. Curing VD, to take an extreme example of this approach, was an invitation to continue the illicit behavior that had brought on disease in the first place and threatened, if anything, to make matters worse.<sup>48</sup> At its core, an environmental approach saw humans and nature in fundamental harmony, while their opponents regarded nature as sufficiently malevolent to attack the human body with illness, leaving it open to legitimate countermeasures with the marshaled armamentarium of orthodox allopathic biomedicine.<sup>49</sup> A belief in such harmony is clear with Rousseau and other anti-Enlightenment ideologues who sought to prevent the illnesses of civilization, prompted by the strains and contradictions of modern life, by returning to allegedly natural conditions. But even Chadwickian sanitationists, believing that civilization promoted health, thought that humankind was, through hygienic behavior, solving problems it had brought upon itself through unregulated urban industrial life, not correcting faults in nature itself.<sup>50</sup>

Seen in terms of this etiological dichotomy there is a unity to the techniques employed to prevent and contain the diseases under the glass here. Quarantinism applied to cholera, vaccination to smallpox, the regulation of prostitution in hopes of stemming syphilis: all were specific manipulations dictated by the precepts of allopathic biomedicine, involving violations of the freedom and bodily integrity of those feared as infectious, subordinating the (afflicted) individual to the interests of the community.<sup>51</sup> The same holds, in our own day, for the classic tech-

<sup>48</sup> It meant bringing on a moral syphilization of society that would have more devastating consequences than the merely bodily variety, as the German abolitionist Katarina Scheven argued: Ed. Jeanselme, *Traité de la syphilis* (Paris, 1931), v. I, p. 378.

<sup>49</sup> L. Belitski, *Gegen Impfung und Impfwang* (Nordhausen, 1869), pp. 2–3. Homeopathy, in this dichotomy, is thus an attempt to brook a fundamental contradiction, unwilling to believe wholly in nature's ability to correct imbalances under its own steam without some allopathic prompting, but able to argue that the basic immorality of human tinkering with natural processes could be excused if the doses administered were in fact so dilute as to be, from the orthodox point of view, nonexistent. Because of its willingness to employ medicine, however diluted, homeopathy was rejected by most diehard believers in "natural" cures: Karl E. Rothschild, *Naturheilbewegung, Reformbewegung, Alternativbewegung* (Stuttgart, 1983), pp. 100–02.

<sup>50</sup> Carl Haffter, "Die Entstehung des Begriffs der Zivilisationskrankheiten," *Gesnerus*, 36, 3/4 (1979), pp. 228–29; William Coleman, *Death Is a Social Disease: Public Health and Political Economy in Early Industrial France* (Madison, 1982), pp. 284–92. The contribution of civilization to disease is the leitmotif of Kenneth F. Kiple, ed., *Plague, Pox and Pestilence* (London, 1997).

<sup>51</sup> Analogies among quarantinism, vaccination and regulation were drawn by contemporaries in

niques of contagious disease prophylaxis that, when deployed against AIDS, have been called the contain-and-control strategy or hard line.<sup>52</sup> Conversely, the environmentalist side of this division seeks, often by means of broad social reform, to correct the supposedly underlying general causes of disease. Sanitationism was a widely popular technique applied to cholera up through the last decades of the nineteenth century. End the social iniquities that condemned the poor to miserable, unhealthy and crowded circumstances and epidemics would resolve themselves. Similar ideas held also for other classic contagious diseases. "The plague," as the Medical Officer of Health for Kensington put it at the height of the bacteriological age, "can find no permanent home among a wellfed community living clean lives in clean surroundings."<sup>53</sup> Many took a comparable approach to smallpox, convinced that hygiene promised to eliminate the disease or at least render it benign.<sup>54</sup> Diseases, as one prominent sanitationist antivaccinator put it, were often the result of an empty stomach, a naked back or a domicile without comfort. The solution was not to be found in antidotes and specifics, through prisons, penalties, police, asylums, lazarettos and dispensaries. If all classes lived in healthy conditions and were alike sober, industrious, temperate and cleanly, epidemics would be eradicated.<sup>55</sup>

For syphilis, a similarly environmentalist faith in the coincidence of social and hygienic reform has held. It was common in the seventeenth century to regard the disease as the outcome of poverty and poor living conditions, amenable therefore to their amelioration.<sup>56</sup> In the nineteenth century, such an environmentalist approach was broadened. Since prostitution was believed to spring from artificial social circumstances (late marriage, commodification of women, unrestricted male sexual access,

the nineteenth century: Mary Spongberg, *Feminizing Venereal Disease: The Body of the Prostitute in Nineteenth-Century Medical Discourse* (New York, 1997), p. 57; Judith R. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge, 1980), pp. 43–44. In our own day, some AIDS libertarians are also antivaccinators: Richard A. Mohr, "AIDS, Gays, and State Coercion," *Bioethics*, 1, 1 (1987), p. 48.

<sup>52</sup> David L. Kirp and Ronald Bayer, "The Second Decade of AIDS: The End of Exceptionalism?," in Kirp and Bayer, eds., *AIDS in the Industrialized Democracies* (New Brunswick, 1992); Birgit Westphal Christensen et al., *AIDS Prävention og kontrol i Norden* (Stockholm, 1988), p. 66.

<sup>53</sup> *Sanitary Record*, 19 (5 March 1897), p. 200.

<sup>54</sup> *Die Cholera. Ihre Verhütung und Heilung: Von einem erfahrenen Arzte* (Hannover, 1885), p. iv; *SB*, 1882/83, Akst. 164, pp. 578–79.

<sup>55</sup> Jno. Pickering, *Which? Sanitation and Sanatory Remedies, or Vaccination and the Drug Treatment?* (London, 1892), pp. 84–85, 143.

<sup>56</sup> Annemarie Kinzelbach, "'Böse Blattern' oder 'Franzosenkrankheit': Syphiliskonzept, Kranke und die Genese des Krankenhauses in oberdeutschen Reichsstädten der frühen Neuzeit," in Martin Dinges and Thomas Schlich, eds., *Neue Wege in der Seuchengeschichte* (Stuttgart, 1995), p. 51.

instinctual overstimulation), both the demand for and supply of mercenary sex could be reduced. On the former side, male prenuptial continence, earlier marriages and subsequent monogamy promised to lessen demand, while improved living conditions, greater employment possibilities, expanded educational opportunities and higher wages for women held out the prospect of drying up the supply. The point, as one observer put it, was to remove the cause of irregular intercourse and its attendant VD, to teach the young to live cleanly, morally and chastely. Seeking to prevent the effects of VD without removing the cause was (in an analogy that spoke to the faith in prevention at the heart of the environmentalist enterprise regardless of the disease at issue) no more scientific than treating tonsillitis due to sewer-gas by swabbing throats and prescribing formamint tablets rather than renewing the drains.<sup>57</sup> An environmentalist approach to syphilis envisioned a reformed society where sexual and social practices had been brought into harmony and (depending on the vantage) either chastity and monogamy had equilibrated demand and legitimate supply at a low level or, in the free-love version, natural copulation unhindered by the constraints of marriage, family or convention had dried up the demand for mercenary sex, although, in this case, not necessarily solving the problem of VD spread through consensual, non-commercial but promiscuous relations. An environmentalist approach continues even today in good health among those who question or minimize the role of the HIV as the (single) cause of AIDS, focusing instead on the effects of poor nutrition, bad sanitation, “environmental insults,” compromised immune systems due to drug abuse, sperm overload or other illness, depression, poor access to medical care and other alleged cofactors of the epidemic as a way of applying a social analysis to what virologists insist is a purely microbiological problem.<sup>58</sup>

<sup>57</sup> *Nineteenth Century*, 82 (July–December 1917), p. 1052; *ZBGK*, 8, 2 (1908), pp. 51–57.

<sup>58</sup> Meredith Turshen, “Is AIDS Primarily a Sexually Transmitted Disease?” in Nadine Job-Spira et al., eds., *Santé publique et maladies à transmission sexuelle* (Montrouge, 1990), p. 347; Michel Jossay and Yves Donadieu, *Le SIDA* (Paris, 1987), pp. 167–79; Rolf Rosenbrock, “The Role of Policy in Effective Prevention and Education,” in Dorothee Friedrich and Wolfgang Heckmann, eds., *Aids in Europe: The Behavioural Aspect* (Berlin, 1995), v. V, pp. 25–26; Rolf Rosenbrock, “Aids-Prävention und die Aufgaben der Sozialwissenschaften,” in Rosenbrock and Andreas Salmen, eds., *Aids-Prävention* (Berlin, 1990), p. 18; Gene M. Shearer and Ursula Hurtenbach, “Is Sperm Immunosuppressive in Male Homosexuals and Vasectomized Men?,” *Immunology Today*, 3, 6 (1982), pp. 153–54; G. M. Shearer and A. S. Rabson, “Semen and AIDS,” *Nature*, 308, 5956 (15 March 1984), p. 230; Henri H. Mollaret, “The Socio-Ecological Interpretation of the Appearance of Really New Infections,” in Charles Mérieux, ed., *SIDA: Epidémies et sociétés* (n.p., 1987), p. 112; Treichler, “AIDS, Homophobia, and Biomedical Discourse”, pp. 53–54; J. A. Sonnabend, “The Etiology of AIDS,” *AIDS Research*, 1, 1 (1983), p. 9; Peter H. Duesberg, *Infectious AIDS: Have We Been Mised?* (Berkeley, 1995), pp. 328–33.