DRUNKENNESS, DEGENERATION, AND EUGENICS IN BRITAIN, 1900-1914

by

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This dissertation presents a reinterpretation of the early British eugenics movement. It focuses on a previously unrecognized “Lamarckian” style of eugenics that resembled the dominant approaches to improving racial health in countries such as France and Brazil, where eugenics was closely allied to the public health and social hygiene movements. This study further attempts to situate certain Edwardian eugenic discourses within the context of debate over the relative value of laboratory versus statistical approaches to medical-scientific research. The main narrative addresses the history of scientific notions about how parental alcohol consumption could cause physical and mental degeneracy in offspring. These ideas found support from laboratory, clinical, and social studies carried out mainly by supporters of the temperance movement, and they were often conceived as an alternative soft hereditarian or non-hereditarian version of eugenic thought. The leading proponent of this “preventive” style of eugenics was the medical writer and temperance advocate Caleb Saleeby.

Lamarckian eugenics and its scientific underpinnings were first seriously challenged in 1910 by the eugenist Karl Pearson’s controversial statistical study purporting to show that parental alcoholism did not have deleterious effects on offspring. Pearson’s alcoholism study represented one of many efforts made by his biometrical school to establish its new techniques of mathematical statistics as a research methodology and a scientific basis for
social policy making. The 1910 alcoholism memoir led to a bitter dispute with medical professionals and social scientists representing Lamarckian eugenics, who championed their own solutions to the crisis of national degeneration and their own methods of scientific research. Yet hard hereditarian eugenics, Lamarckian eugenics, and public health reforms also exhibited significant ideological affinities, namely in their shared imperialist rhetoric, class and gender biases, and emphasis on reforming individual behaviour rather than environmental and economic circumstances. In accordance with recent historiography of eugenics in other national contexts, the current study suggests that in its less rigidly hereditarian incarnations this biologically based reform programme was more closely related to preventive medicine than to human genetics.
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The main argument presented in this dissertation is that the eugenics programme in Edwardian Britain was not nearly as homogeneous as the existing historiography has suggested, in terms of both the scientific knowledge about heredity and disease upon which eugenics was grounded and the social reform policies that it entailed. This thesis arose out of my initial investigations into the history of the medical temperance movement and the nineteenth-century science of alcohol.\(^1\) My particular interest in theories of hereditary alcoholic degeneration was stimulated by a brief article on that topic published over a decade ago by William Bynum.\(^2\) From these preliminary studies I noted that most of the knowledge generated in the nineteenth and early twentieth centuries about the pathological effects of parental drinking on offspring bore no relation to the Mendelian or biometrical theories of hard heredity that have usually been associated with the eugenics movement. Instead this knowledge corresponded more closely to a Lamarckian or soft hereditarian viewpoint, as many proponents of eugenics who belonged to either the Eugenics Education Society or the Society for the Study of Inebriety assumed that the environmental agent alcohol could alter the hereditary material or otherwise harm the offspring of drinkers.

British eugenics has conventionally been described in terms of policies for controlling

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the transmission of desirable and undesirable hereditary traits in human populations. However, a more comprehensive examination of the literature of the early eugenics movement suggests that many writers were less interested in encouraging fit parenthood or curbing unfit parenthood than in eliminating various environmental or nurtural sources of degeneracy in offspring. They identified for example alcoholism and poor maternal care as typical circumstances of working-class life that led to high rates of child morbidity and mortality. Prospects for the "future of the race" were thus believed to depend not only on the innate fitness of the population but also on pre- and post-natal factors that might impair the well-being of infants and children who represented the next generation of the British race.

A review of recent scholarship on the history of eugenics movements worldwide reveals that similar environmentalist incarnations of eugenics constituted the dominant discourses on racial health in countries such as France and Brazil. As the current study will attempt to show, far from being an unorthodox conjecture about the causes of hereditary racial degeneration, so-called Lamarckian eugenics was popular even in Great Britain, the setting of the supposedly archetypal hard hereditarian eugenics movement. In all of these national contexts the success of an alternative Lamarckian style of eugenics was contingent upon a significant medical presence within the eugenics movement, including general practitioners, obstetricians, and medical officers of health. This class of medical eugenists tended to be less concerned about improving the overall hereditary quality of the population than were their mainline colleagues. They instead favoured schemes that were termed "preventive eugenics" by the chief proponent Caleb Saleeby.
In Britain both negative and preventive eugenics typically aimed at improving the quality of the working classes, or more specifically the urban "residuum" where stunted bodies, enfeebled minds, and anti-social behaviours were said to be most heavily concentrated. But rather than trying to regenerate racial vitality exclusively through the prevention of parenthood on the part of these inferior stocks, Saleeby and other Lamarckian eugenists championed educational and legislative means of protecting parents and offspring from "racial poisons" such as alcohol, which could impair the health of current and future generations. For these eugenists the "environmental" sources of ill health in the working classes thus did not refer to poverty and inadequate diet, as would later be emphasized in more left-wing interpretations of environmentalism. Edwardians social reformers and eugenists tended to highlight personal failings—especially in the form of ignorance and bad habits such as alcoholism—as the more easily remediable sources of infant mortality, physical deterioration, and racial decline.

Clinical experience, social surveys, and experimental evidence accumulated during the second half of the nineteenth century had indicated a strong correlation between parental drinking and transmitted defects in offspring. In particular, medical-scientific notions about alcoholic heredity were legitimized by temperance doctors who sought health-related arguments for total abstinence, by psychiatrists who pioneered the theory of hereditary degeneration, and by specialists in the medical treatment of addictions. By the turn of the century, virtually all reigning medical authorities on alcohol problems supported some version of hereditary alcoholic degeneration. They presumed that parental and especially
maternal intemperance might affect progeny either through inheritance of acquired somatic modifications, direct damage to the germ plasm, or injuries suffered during ante-natal or infant life.

The notion that current national levels of alcohol consumption might pose a threat to posterity remained popular in medical and social reform circles—especially in the temperance, infant welfare, and eugenics campaigns—until around 1910. At that time a new group of researchers entered the field of alcohol studies and challenged the prevailing scientific concepts and methods. The eugenicist Karl Pearson and his biometrical school at the Galton Eugenics Laboratory rejected the idea that alcohol injured offspring and championed an alternative but by no means original theory of alcoholic heredity: they believed that habitual inebriety was a form of transmissible mental defect which could exist independently of the actual consumption of alcohol. A similar notion of hereditary inebriety had been popularized in the late nineteenth century by members of the Society for the Study of Inebriety, who used it to legitimize their professional role as experts in treating chronic alcoholism. For decades their theory had co-existed more or less peacefully alongside the temperance conviction that alcohol consumption itself could produce defects in the descendants of drinkers. Alcoholism was thus generally assumed to be both symptom and cause of hereditary degeneracy. Pearson however perceived the latter theory to be incompatible with his rigorous hereditarianism, and therefore he set out to overthrow the popular idea that all drinking precipitated racial decay.

After the publication of the biometricians' first memoir on parental alcoholism in April
1910, a nine-month-long debate ensued over the merits of these two theories of alcoholic degeneration. The controversy had slightly different meanings for Pearson and his statistical colleagues in the one camp and the doctors, social scientists, and temperance reformers who criticized the memoir in the other. Pearson felt that he was defending the novel eugenic approach to social reform from attacks by prejudiced doctors and environmentalist reformers. From his perspective statistical evidence proving that parental alcoholism did not in fact have deleterious effects on children now called into question the racial value of the anti-alcohol crusade. If environmental factors such as alcohol did not significantly influence the health or abilities of offspring, then permanent improvements to the human race could only be effected by restricting the reproduction of the innately inferior.

Pearson’s opponents, particularly Caleb Saleeby and Victor Horsley, were leading members of the temperance movement and as such denounced the biometricians as “promoters of alcoholism” whose conclusions seemed to sanction alcohol use as harmless. Yet these participants in the debate also viewed Pearson’s attack on the racial poison theory of alcohol as a serious blow to the great cause of race betterment. If taken as a “safe rule of conduct,” his well-publicized denial that alcohol could poison germ plasm or unborn offspring would ultimately result in the births of even more defective children and the ruin of countless healthy stocks. The temperance writers who spoke out against Pearson’s study thus believed that they were defending not only the anti-alcohol cause, but also an alternative

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definition of eugenics and a more benign approach to revitalizing racial health.

This particular historical episode will therefore serve to illustrate my thesis about the heterogeneous nature of British eugenic thought. I suggest that these hard versus soft hereditarian discourses on alcoholism exemplified two distinct styles of eugenics that coexisted until around the time of the First World War. The Lamarckian and hard hereditarian versions of eugenics were based upon incommensurable bodies of scientific knowledge and proposed distinctive means of race regeneration. Yet in other respects these approaches had much in common, owing to shared class and gender biases which influenced many Edwardian social reform campaigns. The crisis of national inefficiency and physical deterioration that followed the debacles of the Boer War fuelled widespread anxieties about alcoholism, infant mortality, and degeneracy in the lower classes. In particular it was feared that the poor health and stunted growth so often found in the labouring classes would imperil British military and industrial supremacy. Such nationalistic and class-based concerns characterized the work of both Pearson and his medical critics. Eugenists and public health doctors alike employed the rhetoric of empire in order to legitimize their own reform programmes. While the hard hereditarian eugenists assumed that innate fitness could be measured according to socio-economic status, the Lamarckian eugenists and public health doctors addressed such problems as alcoholism, feeblemindedness, and infant mortality as strictly class-limited causes of national decline.

Pearson and his adversary Saleeby also jointly embraced a conservative maternalist doctrine which held the women of the nation solely responsible for reproducing a vigorous
population of mental and manual labourers. Their shared philosophy of "eugenic feminism" emphasized the vital role to be played by superior women of the middle classes as race mothers. A parallel campaign against unfit working-class motherhood, implemented simultaneously under the banners of eugenics and public health, sought to remedy the ignorance and bad habits of mothers as the primary means of reducing mortality and morbidity in their offspring. Thus in both the hard and soft hereditarian discourses on alcoholism much greater emphasis was placed on the high fertility and negligence of inebriate mothers than on the equivalent question of how the drinking habits of men might impact on their families and the race.

With his narrow focus on heredity as the cause and solution of the crisis of racial degeneration, Pearson attempted to establish the hegemony of negative eugenics as a programme of social reform. He was equally concerned however with establishing his new field of mathematical statistics as the scientific basis of the eugenics movement, and with extending his statistical methods into other areas of biological and medical research. Saleeby likewise recognized that the debate over the biometricians' alcoholism memoir involved conflicting methodological ideals. While medical researchers relied on experimental practices and post-mortem observations, the biometricians argued that only sophisticated mathematical analysis of large masses of medical and social data could reveal the causes of social ills and settle the specific question of whether alcohol acted as a racial poison.

These differing styles of scientific research further justified the two groups' competing claims to professional expertise. Pearson and his students such as Major Greenwood and
Raymond Pearl fought on numerous fronts to carve out niches for themselves as professional statisticians. At the same time, doctors were also struggling to gain support for their clinical and laboratory research and to be recognized as rightful guardians of the health of the race. Some leading medical professionals realized that their collective interests might actually be advanced by supporting a version of eugenics that encompassed their own special work in preventive medicine. Thus the 1910-11 alcoholism controversy between Pearson and the temperance doctors may have been driven as much by professional interests as by conflicting theories of degeneration and alternative approaches to improving the biological quality of the population.
I

LAMARCKIAN EUGENICS AND MEDICAL EUGENISTS

1. The Historiography of Eugenics

The last few years have witnessed the emergence of what one scholar has termed a "eugenics industry" within the broader field of the history of the life sciences—an explosion of research on eugenics in many national contexts that threatens to rival even the "Darwin industry" in magnitude and significance. Much of this new historiography examines for the first time the shape of eugenics movements around the world, from Japan to Latin America, Russia to South Africa. This international literature succeeds an even larger body of research published since the 1960s on early-twentieth-century Anglo-American eugenics. Full-length studies by Mark Haller, Lyndsay Farrall, Geoffrey Searle, and Daniel Kevles established our initial picture of the nature of eugenics in these two countries, while these monographs were supplemented by a series of articles delineating more precisely the professional and ideological identities of the British eugenists. More recently, Pauline Mazumdar and


Richard Allen Soloway have both added to our knowledge of the eugenics movement in England by utilizing material from the archives of the Eugenics Education Society (EES) and emphasizing the links that existed between eugenics and other social reform movements of the late-Victorian and Edwardian eras. Yet despite this wealth of research and the variety of interpretations that have emerged from it, I would argue that there is still room for another historiographic perspective on eugenic discourses in Britain, the country where the word "eugenics" was coined by Sir Francis Galton in 1883 and the world's first eugenics society established in 1907.

When Galton initially broached the subject of forming an organization devoted to the study of eugenics to the London-based Sociological Society in 1904, he received a mixed response from the diverse group of scientists, sociologists, economists, doctors, and social activists who were present at that historic meeting. Members of his audience expressed a broad range of opinions about the relative importance of nature and nurture to the well-being of the "race," by which they generally meant the populace of Great Britain. Several speakers who later went on to join the eugenics movement even understood that the definition and

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scope of eugenics need not be narrowly restricted to biological transmission of traits but could include “environmentalist” measures as well, such as improved housing and nutrition, drink control legislation, or education in “mothercraft.” This early confusion and eclecticism among supporters of Galton’s proposal set the tone for the eugenics movement that emerged shortly thereafter, as members of the young Eugenics Education Society continued to espouse heterogeneous views about the aims and the proper domain of their new science and social reform movement.

Brief consideration of the complex composition of the British eugenics movement strongly suggests that the content of eugenic science may have been less monolithic and the boundaries of eugenic policies less circumscribed than has usually been recognized. Lyndsay Farrall’s analysis of the EES membership lists revealed that the largest group whose occupations could be identified were educated middle-class professionals—academics, medical practitioners, and scientists from the fields of biology, psychology, and sociology. Yet for any given year Farrall’s group of scientific and medical experts constituted only a small proportion of the Society’s total membership, which grew from around 300 to as many as 700 during the period 1908-1913. The vast majority of Eugenics Society

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5Farrall, Origins and Growth of the English Eugenics Movement, p. 221. He was able to match occupations to fewer than half of the names in his random sample, owing mainly to the distinctive gender composition of the British eugenics movement. Women made up around 50% of the EES membership at any given time; on the 1910-11 register for instance 303 out of the 529 members were female. Yet their representation on the Society’s executive was never as high.

6The heyday of interest in eugenics was 1913-14, when the total membership of the London and ten provincial branches of the EES peaked at around 1200. Soloway, Demography and Degeneration, p. 34.
members were obviously not specialists in the study of heredity or genetics, nor were they likely to have been especially interested in the ongoing biological debates over theories and mechanisms of heredity.\textsuperscript{7} Their knowledge of the laws of hereditary transmission would not have gone much deeper than the common sense notion of "like begets like."\textsuperscript{8} Many of these eugenists could likely be classified as coming from the tradition of "middle-class meliorism," a phrase used by Mazumdar to describe the "common front of social activists" who joined a number of Victorian and Edwardian reform movements that addressed the particular problem of the urban residuum class.\textsuperscript{9} The presence of large numbers of lay members ensured that the EES remained more of a propagandist than a scientific organization, in contrast to the avowedly research-oriented Galton Eugenics Laboratory at University College London. Moreover, doctors were one of the largest and most influential professional groups represented on the rolls of the Eugenics Society. As I shall argue in the final section of this

\textsuperscript{7}Several prominent biologists and geneticists belonged to the Society in the years before 1920, some only briefly, some serving as long-time council members and vice presidents. These were E. B. Poulton, J. Arthur Thomson, A. D. Darbishire, E. W. MacBride, R. A. Fisher, and the American David Starr Jordan. From the British biometrical school came members Edgar Schuster, David Heron, and Major Greenwood. Medical members who specialized in problems with a strong hereditary component included the psychiatrists and neurologists Robert Armstrong-Jones, F. W. Mott, A. F. Tredgold, Havelock Ellis, and the American Adolph Meyer, along with the psychologists Cyril Burt, Charles Spearman, and William MacDougall.

\textsuperscript{8}Soloway, \textit{Demography and Degeneration}, p. xviii.

\textsuperscript{9}Mazumdar has traced the ideological and membership overlaps between the EES and the Charity Organisation Society, Social Science Association, Moral Education League, and Society for the Study of Inebriety, among others. Mazumdar, \textit{Eugenics, Human Genetics and Human Failings}, pp. 2 and 7-57. The Eugenics Society's in-house historians, writing in 1968, likewise recognized that the organization had been "started by reformers more concerned with social evils than with human genetics." Faith Schenck and A. S. Parkes, "The Activities of the Eugenics Society," \textit{Eugenics Review} 60 (1968): 142.
chapter, these medical members were not any more likely to have been eugenic "purists" interested exclusively in the study of heritable diseases or committed fully to a programme of race betterment through selective breeding.

That there may still be room for some re-evaluation of British eugenic thought is further suggested by recent historical research on eugenics in other national settings such as France, Brazil, and Germany. Mark Adams advocates a comparative approach to the history of eugenics in his volume *The Wellborn Science*. As Adams puts it, the international scholarship assembled in this collection of essays demonstrates the "remarkable diversity of ideas that passed for eugenics" in various countries and suggests that the movements in the United States and England "are certainly not archetypal and may not even be especially typical of the thirty or so movements worldwide." Adams further suggests that comparative studies revealing unexpected patterns of eugenic thought in these other national contexts might in turn have heuristic value for informing a revised historiography of the original case studies, namely the British and American movements. The current study takes up this challenge, following in particular clues from the French and Brazilian models in an effort to

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present a more complete picture of the professional composition and scientific content of British eugenics. Special emphasis will be placed on the prominent role played by medical professionals and on their "unorthodox" views about heredity and the nature versus nurture debate. I argue that these medical eugenists produced an alternative eugenic discourse that has been largely overlooked in the existing British historiography.

**Mainline Eugenics**

Eugenics is conventionally defined as the study and practice of controlled breeding in human populations. As a science and a social reform movement, early-twentieth-century eugenics centred on the belief that many serious social ills resulted from the hereditary "degeneration" of the physical, mental, and moral condition of the people. Poor health and low mental ability, as well as problems such as crime and pauperism, could only be ameliorated by decreasing the proportion of undesirable traits in the population and increasing the proportion of desirable ones. Eugenists called for the segregation or sterilization of the "unfit" and for legislative incentives to encourage "fit" citizens to marry and have larger families. These approaches were termed negative and positive eugenics, respectively.¹³ Some eugenic propaganda further alleged that environmental reforms such as

¹³Negative eugenics in Britain usually amounted to permanent institutionalization of those deemed unfit to reproduce. The only eugenic legislation ever enacted was the 1913 Mental Deficiency Act, which made provision for the segregation of the feeble-minded. Involuntary sterilization never made it onto the eugenic platform in Britain, in contrast to the United States, Canada, and Germany where sterilizations were legalized and regularly performed. Only a few of the more radical British eugenists advocated this procedure, such as Havelock Ellis, "The Sterilisation of the Unfit," *Eugenics Review* 1 (1909-10): 203-6; and Robert Reid Rentoul, *Race Culture; or, Race Suicide? A Plea for the Unborn* (1906; New York: Garland,
housing improvements, poor law relief, or public health measures were powerless to reduce the prevalence of poverty, alcoholism, and disease among the lower social classes. It was believed that bad heredity was at the root of all these problems, and that the influence of nature was stronger than nurture in moulding an individual's physical and mental constitution. Therefore improvements to the conditions of life could not overcome the initial disadvantage of innate defect, nor could such measures have any permanent benefit for the race since only heritable improvements were preserved and accumulated over many generations.

This description of the essence of eugenics as a social philosophy and reform programme corresponds to the "received view" presented in most of the historical literature. I shall borrow Daniel Kevles's term "mainline" to refer to the style of early British and American eugenics that most closely fits this picture.\(^4\) Mainline eugenics was based

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\(^4\)It should be noted however that Kevles himself used the term "mainline" to distinguish the original conservative, class-biased eugenists from the later "reform" eugenists, many of whom were socialists who tried to abolish class and add environment to the eugenic formula during the 1930s and 40s. In contrast to Kevles, I will be arguing for two kinds of eugenics that existed during the same time period, 1900-1914. But in my study the term "mainline" will still refer to most of the same people and ideas described by Kevles and other historians, especially insofar as mainline eugenics always assumed the inferiority of lower social classes and neglected the influence of environment. Reform eugenics is discussed by Kevles, \textit{In the Name of Eugenics}, pp. 88 and 164-75; and Soloway, \textit{Demography and Degeneration}, pp.
exclusively on theories of “hard” heredity—either Mendelian or biometrical—which left no possibility that acquired alterations to the parent’s body, such as greater stature due to improved nutrition or a damaged nervous system caused by excessive alcohol consumption, could be transmitted genetically to the offspring. Rigid hereditarians thus took an extreme position in the nature versus nurture debate, allowing no place for environmental factors to influence the hereditary attributes of the race either positively or negatively (as proposed by alternative theories of “Lamarckian” or “soft” heredity). The mainline style of eugenics was also supposed to be derived from social Darwinian notions of the survival of the fittest and therefore fundamentally opposed to any ameliorative measures that tended to interfere with natural selection. Progressive social policies and advances in preventive medicine were sometimes said to be “dysgenic” in that they permitted the weak and diseased to survive and propagate their kind, instead of being weeded out by infant mortality, tuberculosis, or other selective forces.

A first problem with this picture of mainline eugenics is that it exaggerates the extent of confrontation between hereditarian and environmentalist approaches to social reform, as these were commonly defined during the first two decades of the century. The received view erroneously equates eugenic thought in general with one particular variant that was derisively called the “better-dead” school of eugenics by its contemporary critics. This doctrine held

193-225. Nancy Leys Stepan in her history of Latin American eugenics likewise refers to the British and American movements as “mainline eugenics,” and contrasts these with her own discovery of “non-mainline” eugenics in other national contexts. I argue that something resembling her non-mainline style also existed in Britain. Stepan, “The Hour of Eugenics,” p. 2.
that it would be preferable to let degenerate individuals perish rather than to care for them at public expense in hospitals, asylums, and prisons, or to support them on poor relief so that they might be able to propagate their defective germ plasm. In fact however this “better-dead” stereotype had little basis in reality. At least in England eugenic enthusiasts never supported any proposals for the active or passive destruction of the unfit, while only a few extreme social Darwinists such as Arnold White and Karl Pearson openly lamented the fact that medicine, social reform, and charity abetted the survival of the unfit. Despite the apparent contradictions between the goals of medical progress and race progress, the official

15The “better-dead” school is described in nearly all the standard works on Anglo-American eugenics, such as Searle, Eugenics and Politics, p. 45. However the one historian most guilty of stereotyping all eugenists according to this label is Dorothy Porter, in her article “‘Enemies of the Race’: Biologism, Environmentalism, and Public Health in Edwardian England,” Victorian Studies 34 (1991): 159-78. Porter actually provides little evidence to support her assertion that eugenists tried “to indict prevailing social policies which had positively encouraged the unfit to survive and breed” (p. 161).

16Labelling even these two figures “better-dead” eugenists is problematic. Arnold White, journalist and Liberal imperialist, had already in the 1880s begun writing about the degeneration of the race and the “cult of infirmity.” Yet in fact he actually complained less about interference with natural selection and the propagation of the unfit than about the deleterious conditions of urban life as a cause of poor health. Arnold White, Efficiency and Empire (1901; Sussex: Harvester, 1973), pp. 95-121. Karl Pearson objected to being called a representative of the better-dead school, although in some of his writings he almost seemed to wax nostalgic for the natural destruction of the unfit in primitive societies. He pointed out that in particular his work on infant mortality had been misconstrued: “the recognition of the fact that the infantile death-rate is selective cannot of itself justify the charge that we want the weaklings killed off.” Karl Pearson, Darwinism, Medical Progress and Eugenics, Eugenics Laboratory Lecture IX (London: Dulau, 1912), p. 16. Pearson’s eugenic programme will be discussed in Chapter IV. A better example of social Darwinism can be found in a text by the physiologist John Berry Haycraft, which berated modern medicine at some length for causing racial degeneration. This writer called disease germs “our racial friends” and asserted that by stamping out diseases such as fever, leprosy, and phthisis “we perpetuate poor types.” J. B. Haycraft, Darwinism and Race Progress (1895; London: Swan Sonnenschein, 1900), pp. 54 and 57.
propaganda of the eugenics movement did not generally condemn the ameliorative efforts of doctors and social reformers. As at least one prominent eugenist was at pains to point out, the idea that eugenics and medicine were necessarily at cross-purposes was an unfortunate misperception, one which led to antagonism between eugenists and doctors when instead there should be cooperation:

It is necessary for the eugenist to insist on the dysgenic effects of allowing the unfit to reproduce their kind; and a false impression may thus be created that we are actually opposed to the efforts of the medical profession to preserve this class, an error certain to give rise to illogical prejudices against us. . . . Medical men must, no doubt, strive to keep the unfit alive; but are they not therefore doubly bound to join us in our efforts to diminish the multiplication of all the unquestionably degenerate types?17

The fundamental principle behind the mainline eugenics programme was that “reproductive selection” could now replace ruthless natural selection in civilized societies. The innately unfit would not have to be destroyed in order to prevent them from propagating their defective germ plasm if instead they could be discouraged from marrying or forcibly segregated from the normal population and the opposite sex. Preventive medicine and environmentalist social policies thus need not lead inevitably to racial decay, as Herbert Spencer and other nineteenth-century social Darwinists had presumed. The way in which negative eugenics could effectively counteract the dysgenic influences of medicine and social welfare was conveyed for example by the eminent psychiatrist and active EES member A. F. Tredgold:

Such matters as the housing, feeding and remuneration of our working classes,

infantile mortality, unemployment and pauperism, are greatly in need of attention. But measures to deal with these will not, and cannot, in themselves, solve the problem of national degeneracy. They do not touch the root of the tree of degeneracy, indeed, they are for the most part an attempt to improve rather than to curtail its growth. . . . National progress can only take place when means to improve the fit are accompanied by methods to prevent the increase of the unfit.18

Most leading eugenists, including Tredgold, were willing at least to pay lip service to the need for collaboration with medical personnel and with environmentalist programmes such as the infant welfare campaign and the temperance movement. They realized that it would make good public relations to appear conciliatory and cooperative. For example Major Leonard Darwin, a son of Charles Darwin and president of the EES from 1911 to 1928, repeatedly admonished his fellow eugenists for their extremist propaganda. He complained that they sometimes sounded as though they were completely unsympathetic to the suffering of the diseased and impoverished, and that they were “careless concerning many reforms intended to improve the lot of human beings by improving human surroundings.” Eugenics had to rely on some “less barbarous method” than “destroy your neighbours today for the future good.”19 Darwin further acknowledged that suitable environment and education were important for advancing human evolution, since superior inherited potentialities required optimal surroundings in which to develop. For this reason environmentalist


programmes ought to be perceived as reinforcing rather than counteracting any progress made through selective breeding. The very same argument was made by the editor of the first volume of the *Eugenics Review*, as he outlined what he believed to be the EES's official position on the value of improved living conditions:

> Environment undoubtedly exerts a potent influence on those individual tendencies which, latent at birth, are capable of being moulded by circumstances after birth. It [the EES] will, therefore, advocate all social reforms that allow such tendencies free play when they are calculated to be beneficial to the community, and that restrain, or serve to repress, such tendencies when they are calculated to be harmful to the community.\(^{20}\)

The official spokesmen for the Eugenics Society thus did their best to distance themselves and the eugenics movement in general from the contentious better-dead stereotype. Darwin and most of his fellow hereditarians were satisfied to let environmentalists pursue their own distinct approach to social reform. Controversialists such as G. Archdall Reid and Karl Pearson, whose confrontations with the temperance movement will be discussed in the chapters to follow, were the exceptions to this rule. Most mainline eugenists were more careful to avoid controversy. They often chastised environmentalists for having overlooked heredity as a factor influencing the health of the people, but they did not generally condemn them for promoting dysgenic policies.

Based on these arguments, then, I shall henceforth use the term “mainline” in the following revised sense. Mainline eugenists consistently emphasized the importance of nature over nurture, especially insofar as they denied the possibility that any environmental agencies could alter transmissible qualities. This element of the received view—the mainline

eugenists' strict hereditarianism—can therefore be retained. On the other hand, their attitudes towards environmentalist reforms such as public health need to be examined more closely. While not necessarily hostile towards them, mainline eugenists did nonetheless believe that such measures alone could never be as effective for regenerating racial vitality as could negative and positive eugenics. A typical argument was that developed by the eugenist and pioneering sexologist Havelock Ellis in a short book on *The Problem of Race-Regeneration*. Ellis praised nineteenth-century social reform efforts for having greatly ameliorated the more deplorable conditions of industrial life, such as insanitary streets and long factory hours, but he then went on insist that these kinds of reforms had now outlived their usefulness. Sanitary and housing improvements may have bettered the conditions of life but they could do nothing for “life” itself: the next logical step in the biological and social evolution of mankind was therefore to begin repairing the hereditary quality of the population.21

This more accurate description of mainline eugenics still represents only a first step towards constructing a revised interpretation of British eugenic thought. For whereas most mainline eugenists may have been at best tolerant of rival reform programmes, many of their colleagues in the movement were “non-mainline” in the sense that they demonstrated far greater sympathy for certain forms of environmentalism. Some of them actually participated in for example the infant welfare and temperance campaigns, while others lobbied for the incorporation of these environmentalist approaches into the policies of the Eugenics

Education Society. Mainline eugenists by contrast preferred their movement to remain completely separate from all non-hereditarian operations. I contend therefore that a greater flaw in the received view of British eugenics is that it fails to recognize that many supporters of the cause did not subscribe to even the modified definition of mainline that I have just provided. The evidence to be presented in this and subsequent chapters will attempt to show that neither the anti-environmentalism nor the rigorous hereditarianism featured in the received view were on the agenda of many of the original British eugenists.

Most of the historical literature on the British eugenics movement has so far tended to direct attention to a few major figures who espoused ideas closely corresponding to the received view. These included the founder of eugenics Francis Galton, two of the early presidents of the EES Montague Crackanthorpe and Leonard Darwin, and the head of the Galton Eugenics Laboratory Karl Pearson. Others whose mainline ideas have been discussed at some length were the major popularizers of eugenics such as the physicist W. C. D.

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22Mainline eugenists such as Major Leonard Darwin were not willing to confer such a “wide meaning to the term ‘Eugenics’” that it would include “the direct effects of changes of environment within its scope.” In his EES presidential address of 1912, Darwin acknowledged that posterity would surely benefit from improving both the surroundings and the inborn qualities of future generations, and that some overly zealous eugenists may have tended to overlook the importance of environment. Nevertheless, he concluded that the only good reason for including environment within the scope of eugenics was to forge alliances with other reform movements or “to combine in one army all the forces fighting for human improvement.” This had presumably been Galton’s motive for providing such a vague definition of eugenics in the first place. Darwin on the other hand called for restricting the use of the term eugenics to “agencies affecting the inborn characters of future generations,” his object being “merely clearness of expression and not in any sense the disparagement of environmental reforms.” Darwin, “Presidential Address, 12 June 1913,” pp. 4-5.
Whetham, the philosopher F. C. S. Schiller, and the journalist Arnold White. However, a few historians have also pointed out that not all of the important British eugenists followed the mainline model. For example, Peter Bowler has written about the Lamarckian eugenics of E. W. MacBride, Mazumdar mentions the neurologist A. F. Tredgold and his notion of the environmental origins of hereditary mental deficiency, and Soloway and Geoffrey Searle both list among the key players in the early Eugenics Society the medical writer Caleb Saleeby, who popularized the pseudo-Lamarckian "racial poison" theory of how alcohol damaged germ plasm. All of these individuals considered themselves eugenists despite their apparently unorthodox ideas, and none can be dismissed as merely marginal characters in the movement. Their alternative notions about heredity and eugenics have occasionally been noted but not yet fully accounted for in any of the existing scholarship. The current study is intended to fill this gap, focusing in particular upon Caleb Saleeby's racial poison theory of alcohol and his heterodox opinions as to which methods of improving the health of current and future generations ought to be included under the rubric of eugenics.

The new interpretation that will be presented in this thesis arises out of two particular observations about the content of eugenic science and the professional composition of the

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23In particular the books written by Farrall, Kevles, Searle, and Soloway are largely restricted to analysis of these few key figures. Mazumdar on the other hand examines the scientific and ideological positions of several equally prominent but less often studied figures who fit the mainline model, especially E. J. Lidbetter and R. A. Fisher.

eugenics reform movement in Great Britain between the turn of the century and the First World War. First, I would suggest that the well-known rivalry between the Mendelian and biometrical theories of heredity, which was played out partly in the context of the eugenics movement, has tended to overshadow the continued existence of alternative “Lamarckian” ideas about heredity and racial degeneration. These ideas blurred the distinction between nature and nurture that was supposedly central to the eugenics programme. Following the lead of some of the recent international scholarship, I shall use the somewhat inaccurate term “Lamarckian” to refer to the style of eugenics in Britain that rejected rigid hereditarianism. It must however be recognized that eugenic notions about soft heredity were rarely formulated according to any definite biological theory. Nor did they bear any relation to the writings of the pre-Darwinian evolutionist Lamarck or to the American school of neo-Lamarckian evolutionists that emerged around 1900.  

25 The term “Lamarckian” was commonly used in early-twentieth-century biology to describe the idea of inheritance of acquired characteristics, which many biologists held to be incorrect according to August Weismann’s 1883 theory of the “continuity of the germ plasm.” Weismann had suggested that the hereditary material or germ plasm was contained in the reproductive cells alone, and that these remained separate from the soma (the cells of the rest of the body) throughout the life of the individual organism. Since only germ cells were continuous from parents to offspring, then acquired somatic modifications such as the muscular blacksmith’s arms or the docked tails of mice could not be transmitted. The idea of inheritance of acquired traits was associated with the name of the early-nineteenth-century naturalist Jean-Baptiste de Lamarck, owing to the fact that he had incorporated it into his scheme of possible mechanisms of evolutionary change. However, as a theory of hereditary transmission this idea had by no means originated with Lamarck and later in the century it found widespread support, even from Charles Darwin and his hypothesis of pangenesis. Lamarckian ideas were also identified with a small group of biologists studying mechanisms of evolution and heredity during the first two decade of the twentieth century. On the story of this American school of “neo-Lamarckian” naturalists and paleontologists, see Peter Bowler, The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around 1900 (Baltimore: Johns Hopkins UP, 1983), pp. 118-81.
discredited theory of inheritance of acquired characters, which had been the basis of Lamarck's own evolutionary mechanism. Instead, I shall describe as "Lamarckian" any and all eugenic speculations about how environmental factors might influence heritable traits. In some cases the Lamarckian eugenists even went so far as to assume that factors such as parental alcoholism which could influence offspring congenitally or post-natally were equally relevant to the eugenic goal of preserving racial health.

My second observation about British eugenics is that many of those writers who I label Lamarckian eugenists happened to be medical professionals—mainly public health doctors, obstetricians, psychiatrists, surgeons, and general practitioners. As I hope to show, this professional dimension of the early eugenics movement was especially crucial to the popularity of the Lamarckian alternative to hard hereditarian eugenics. An approach to race betterment that incorporated attention to environmental influences and de-emphasized the need for curbing the multiplication of the innately unfit appealed to these doctors because it was more consistent with their work in preventive and curative medicine. They might even have perceived their participation in the eugenics movement as a means of advancing the collective interests of the medical profession.

Assumptions about the so-called environmental causes of racial decay in part derived from nineteenth-century sanitary medicine and its emphasis on improving or "cleansing" the urban milieu of filth and overcrowding. More often though, the environmental reforms advocated by medical eugenists corresponded to the strong emphasis placed upon "personal
factors" in early-twentieth-century public health. Attention to personal factors included prevention and treatment of diseases such as tuberculosis and syphilis, but more importantly it involved surveillance and intervention in the home life and behaviour of individuals.

Public health authorities concerned about infant mortality, physical deterioration, or race progress concentrated in particular on educating individuals in order for instance to curb their dangerous drinking habits or raise the standard of parental care. During this period social reform and public health thus focused much more heavily on personal failings and immoral behaviour than on efforts to improve the working-class standard of living in terms of wages, nutrition, and housing. In fact it would not be until the 1930s and 40s that physicians and social activists in Britain finally began to recognize that stunted growth, susceptibility to infectious disease, and mortality among children in the urban slums were mainly caused by the inadequate diets of lower-class families. My use of the term "environmentalism" therefore refers to such measures aimed at reforming individuals rather than their socio-

26This shift from an "environmental" to a "personal" focus is addressed at greater length in Chapter IV.

27Some Edwardian medical experts did mention the problem of poor nutrition as a cause of infant mortality and degeneration, but they invariably assumed that the average working-class wage of "round about a pound a week" should have sufficed for basic needs. Those families that were ill-nourished must have had mothers who were ignorant about proper diet and food preparation techniques or fathers who wasted too much of their income on drink. Eugenists and public health doctors alike were eager to blame individuals for their ignorance and moral failings, while overlooking the true economic causes of ill health. For a good summary of this emphasis on moral reform or improving individual behaviour in the writings of a typical Edwardian social activist, the medical officer of health Arthur Newsholme, see John Eyler, "The Sick Poor and the State: Arthur Newsholme on Poverty, Disease and Responsibility," in C. Rosenberg and J. Golden, eds., Framing Disease: Studies in Cultural History (New Brunswick: Rutgers UP, 1992), pp. 275-96.
economic conditions, by methods distinct from the equally individualistic hereditarian
programme of selective human breeding.

*International Comparisons*

Recent international research has stressed the fact that early-twentieth-century eugenics
was differently defined in different local settings. Even contemporary commentators such as
Leonard Darwin, in his introduction to the published volume of papers presented at the First
International Eugenics Congress in 1912, recognized that eugenists from various countries
displayed no “adherence to any fixed eugenic creed,” since “in so new a field, wide
differences of opinion as to the methods to be adopted are certain to exist.” While
acknowledging the historical contingency of the content and meaning of eugenics in each
national context, the historian utilizing a comparative approach might nevertheless expect to
find some similarities between local movements. In particular, I shall here make use of two
of Mark Adams’s universal “dimensions” of eugenic thought—the scientific and the
professional—in drawing comparisons across national contexts. I intend to show that in
their scientific content and professional make-up certain strands of British eugenic thought
resembled the dominant “non-mainline” forms of eugenics in other countries.

In both France and Brazil during the 1910s and 20s, the scientific foundations of

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29 Adams, “Towards a Comparative History of Eugenics,” pp. 221-25. The complete list of
dimensions he discusses are the scientific, disciplinary, professional, institutional, popular,
and political.
eugenics were decidedly Lamarckian in the expanded sense of that term described in the previous section. Rarely were sharp distinctions made between nature and nurture, or between hereditarian and environmentalist policies. Any number of environmentalist reforms were championed under the scientific banner of eugenics, while the eugenics movement itself was closely allied with campaigns for infant welfare and social hygiene. French and Brazilian eugenicists thus placed less emphasis on breeding out undesirable hereditary traits than on protecting parents and offspring from external sources of degeneracy. Recent scholarship has also indicated that eugenics in France, Latin America, and many other countries was predominantly a medical rather than a scientific movement, led by physicians who believed that they were uniquely qualified to safeguard national and racial health.

The French Eugenics Society was founded in 1912 with a membership consisting of over 50% medical men. William Schneider's treatment of the French eugenics movement emphasizes the broad range of opinions expressed about the causes of the perceived biological decline of the populace, which in turn translated into a variety of proposals for how to effect improvement. Some leading French eugenicists advocated measures identical to those of British mainline writers: they wanted to encourage the fit to have larger families, complained about the high fertility of the poorer classes, and proposed marriage restrictions,

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30Schneider, Quality and Quantity, p. 93. By contrast only 5% of the founding members of the French Eugenics Society were scientists. Schneider cites some other interesting statistics about the largely medical composition of eugenics movements worldwide. Physicians made up 22% of the British EES Council members, 20% of the Council of the American Eugenics Society in 1923-35, 33% of the total membership of the German Race Hygiene Society in 1913, and 70% of the founders of the Japanese Eugenics Association in 1925.
sterilization, or banishment of the biologically unfit. However, most of the eugenicists that Schneider discusses tended to favour "milder" forms of eugenics, which were based not on the principles of innate fitness and artificial selection but rather on preventive medicine and environmental reforms. French notions about the appropriate domain of eugenics were evident for instance at the 1912 International Eugenics Congress. None of the topics addressed by the French delegation to this London congress fit the narrow Anglo-American model of eugenics. Instead their papers considered the racial consequences of such medical and public health problems as infant welfare, syphilis, and alcoholism.31

Initially the French Eugenics Society included a large number of medical practitioners from the infant and maternal welfare professions. Schneider demonstrates convincingly that the novel French medical discipline called "puericulture," or infant management, was in fact the main precursor of the eugenics movement in France.32 This speciality had been popularized in the 1890s by the obstetrician Adolphe Pinard, later a founding member of the Eugenics Society, who defined it as "knowledge useful to the reproduction, preservation, and improvement of the species."

Puericulture included all factors affecting the health of

31 Adolphe Pinard contributed a paper asserting that practical education in maternity care was more critical than scientific research on heredity; Frédéric Houssay argued that the goal of eliminating the unfit should be secondary to preventing the creation of more degenerates through alcoholism or other diseases; and a Lamarckian influence was apparent in the papers by H. Hallopeau and Valentin Magnan on the racial effects of syphilis and alcoholism. These papers or abstracts of them were published in the volume Problems in Eugenics, pp. 458-59, 158-61, 347-51, and 367-79.


33 This exact wording was later incorporated into the Eugenics Society statutes as part of the definition of eugenics. William Schneider, "The Eugenics Movement in France, 1890-
newborns, both during pregnancy and after birth. In his own maternity clinic practice, Pinard had discovered that the healthiest babies were born to women who were well-rested and nourished before and after childbirth. Eventually however he began to stress a more hereditarian aspect of infant welfare, called “puericulture before procreation.” This Lamarckian doctrine held that if both parents were not healthy at the time of conception they risked transmitting their debility to the unborn offspring. After 1912, puericulture’s dual emphasis on hereditary fitness and ante-natal care came to be adopted by the French eugenics movement as well. Eugenicists and baby doctors thus shared a common set of concerns about the future well-being of the species and the health of individual babies. I shall contend that a similar pattern can be found in British eugenic discourses, where it was sometimes assumed that steps taken to save babies would also strengthen the race by eradicating the environmental causes of infant mortality and morbidity.

Physicians active in the public health and social hygiene movements were also heavily represented in the ranks of the French Eugenics Society during the 1910s. “Social hygiene” encompassed medical efforts to combat alcoholism, venereal disease, and tuberculosis—all afflictions which were said to impair the well-being of society rather than just individuals and which might have heritable effects on subsequent generations. Like Pinard’s doctrine of puericulture before procreation, theories that identified alcohol, syphilis, and tuberculosis as causes of racial degeneration were contingent upon what Schneider terms “neo-Lamarckian” beliefs about pathological heredity. Schneider’s analysis was therefore the first to call

attention to the continued popularity of Lamarckism in twentieth-century eugenics and to dispel the myth that eugenics was invariably associated with Mendelism and biometry.

The conclusion that French eugenic thought was grounded in Lamarckian convictions accords well with the standard view of the history of genetics in France. The French scientific community was relatively slow to accept Mendelian genetics and instead clung to biological theories of soft heredity until at least the 1940s. Unfortunately though, Schneider tends to invoke “neo-Lamarckism” as his main explanatory framework for French eugenics without fully defining what the eugenicists themselves meant by soft heredity. He implies that these reformers erected their policies for ameliorating the health of future generations on the theory of inheritance of acquired characteristics. Yet it seems clear from his descriptions that they did not actually believe for instance that an alcoholic father transmitted his acquired habit or drink-induced pathologies to his offspring. In fact what the baby doctors and social hygienists more commonly assumed was that alcohol could act as a toxic agent that directly damaged the germ plasm or developing fetus. Moreover, given that most of the French eugenicists were medical men rather than biologists, it seems likely that their so-called Lamarckian eugenics had little to do with the current state of knowledge about the laws and mechanisms of heredity, or with French biologists’ preference for inheritance of acquired characters over the Mendelian doctrine. Instead these doctors assumed that heredity was malleable based primarily upon their own practical experience with family histories of

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alcoholism and the ravages of syphilis upon offspring.\(^3\) Schneider also fails to acknowledge that the continuing viability of soft heredity, especially within medical circles, was hardly unique to the French situation. Thus if in England or America there were similarly significant numbers of medical eugenists involved in the movement for race betterment, we might fully expect to find that they too employed notions of soft heredity in their eugenic schemes.

A number of historians have treated the broader social background of eugenics and hereditary thinking in France.\(^3\) French anxieties about “national degeneration” were fuelled during the last decades of the nineteenth century by increased incidence of social

\(^{35}\)In his new book on eugenic euthanasia in the United States, Martin Pernick briefly discusses the fact that “mass culture” and medical practitioners often included non-scientific assumptions about malleable heredity in their definitions of eugenics (he wisely avoids the more imprecise term Lamarckian heredity). Pernick recognizes that a soft hereditary eugenics was by no means confined to doctors or scientists whose intention was to defend the Lamarckian theory of heredity as an alternative to Mendelian eugenics. In the course of his analysis of popular eugenic films of the 1910s, he argues that doctors and the lay public incorporated a broad range of methods for improving the health of future generations into their assumptions about what counted as eugenics. For example, hormonal disorders and infectious diseases were often considered to be transmissible to offspring, since these might alter the germ plasm or cause congenital birth defects. Thus the lay definition of heredity remained “expansive enough for eugenics to claim as its domain the entire range of human imperfections.” In films and other popular propaganda, the term “eugenic” often had nothing to do with ancestry and hereditary traits but meant simply “fit to marry.” “Eugenics, the science of improving heredity, meant scientifically protecting children against getting anything bad from their parents, and assuring that parents gave their children nothing but the best.” Martin Pernick, The Black Stork: Eugenics and the Death of “Defective” Babies in American Medicine and Motion Pictures Since 1915 (Oxford UP, 1996), pp. 48-54.

\(^{36}\)In addition to Schneider, Quality and Quantity, pp. 46-53, see Robert Nye, “Degeneration and the Medical Model of Cultural Crisis,” in S. Drescher, et al., eds., Political Symbolism in Modern Europe: Essays in Honor of George L. Mosse (New Brunswick: Transaction Books, 1982), pp. 19-41. This topic is addressed again in Chapter II where I describe various nineteenth-century theories of degeneration.
diseases such as alcoholism, syphilis, and tuberculosis, along with alarmingly high rates of infant mortality and a sharply declining birthrate. It was widely feared that the absolute size and biological vigour of the French population were declining relative to larger national powers such as Germany. Hence in France a number of interconnected social reform movements, including eugenics, social hygiene, and pronatalism, forged a combined attack on this perceived crisis of biological decline. All of these social reformers agreed that the nation’s supply of labourers and soldiers could be regenerated in both “quality and quantity” by preventing the spread of social diseases, remedying high rates of infant mortality, and fostering a higher birthrate. Here again I suggest that the historiography of French eugenics can serve as a useful paradigm for interpreting eugenic discourses in other nations. As will be seen later, in the British context an analogous problematic of national decay—which after the turn of the century was referred to as the crisis of “physical deterioration” or “national inefficiency”—likewise united supporters of such seemingly diverse causes as eugenics, infant welfare, and temperance.

Fruitful lessons might similarly be learned from Nancy Leys Stepan’s analysis of the eugenics programmes founded in several Latin and South American countries during the 1910s and 20s. In particular, Stepan’s account of the Brazilian eugenics movement corresponds most closely with the scientific and professional aspects of the French and non-mainline British styles of eugenics. It must however be admitted that any attempt to search

37 In “The Hour of Eugenics” Stepan analyzes eugenics in Brazil, Argentina, and Mexico. The first Latin American eugenics organization was founded in Sao Paulo in 1918, while the movement as a whole achieved its peak popularity in the 1930s.
for resemblances between Latin American and Western European eugenics prior to the
Second World War must disregard the crucial factor of race. Whereas racialist discourses
were never very prominent in the early-century British and French contexts, in the racially
mixed Brazilian society assumptions about the innate inferiority of indigenous people, blacks,
and mulattos played a central although unexpectedly complex role in the eugenics
problematic. The white ruling class in Brazil, eager to forge a single national and ethnic
identity out of the diverse racial make-up of the republic, believed that the "lower" races were
naturally disappearing as they interbred with superior European stocks.\textsuperscript{38} Thus
miscegenation, far from being condemned as a cause of racial decay, was actually encouraged
as one means of achieving racial regeneration. As Stepan further explains, this theory of the
natural "whitening" of the population allowed Brazilian eugenicists to de-emphasize the issue
of biological race and to concentrate instead on the health of the degenerate urban working
class, which happened to consist mainly of blacks and mulattos.\textsuperscript{39}

The Brazilian elites were thereby able to formulate their eugenic policies not in racist
terms but rather as benevolent "hygienic" measures that aimed to alleviate the misery and
sickness of the urban poor. In this regard numerous similarities with the French eugenics

\textsuperscript{38}Nancy Leys Stepan, "Eugenics in Brazil, 1917-1940," in Mark Adams, ed., \textit{The
Wellborn Science: Eugenics in Germany, France, Brazil, and Russia} (Oxford UP, 1990), pp.
126-30.

\textsuperscript{39}\textit{Ibid.}, p. 144. "Ironically, faith in whitening, itself based on the racialist assumption of
the superiority of the European race, rendered an extreme eugenics unnecessary in Brazil." That
is to say, because Brazilian eugenicists believed the lower races were already disappearing
through racial crossings, there was no need for them to resort to more extreme or overtly
racist eugenic measures such as immigration restrictions and sterilization.
movement can be identified. In Brazil eugenics and other health reforms of the 1910s were initiated in response to social and labour unrest as well as to patriotic sentiments about "national destiny." As was the case in France, the Brazilian ruling classes recognized that national power and economic growth depended upon their ability to manage the health of the masses, mainly by ameliorating their often appalling conditions of life. Eugenics could thereby contribute both to social stability and the national good, or to "order and progress" as the motto of the republic had it.40

Some Brazilian eugenicists advocated segregation or sterilization to check the multiplication of the "grossly degenerate"—the hereditary class of mental defectives, criminals, and paupers. But most of their colleagues before 1930 favoured a "preventive" version of eugenics that was much closer to the ameliorative public health tradition. "Traditional medical themes—alcoholism, venereal diseases, degeneration, fertility, natality, tuberculosis—were linked to the 'purification' and eugenization of the nation."41 Eugenic measures were frequently equated with providing a "sanitary environment" for the masses, which meant eliminating overcrowded and insanitary housing, curing diseases, and discouraging vices such as alcoholism. Stepan even suggests that health professionals in Brazil may have deliberately appropriated the term eugenics in their efforts to gain scientific legitimacy for nascent preventive medicine, social hygiene, and infant welfare efforts.42


41 Ibid., p. 49.

42 Ibid., p. 87. I shall likewise argue for some degree of cooperation between the eugenics and public health movements in Edwardian Britain, recognizing however that the relationship was not as close or as extensive as in the Brazilian situation. Doctors in the well-established
the public mind eugenics thus became virtually indistinguishable from other medical approaches to improving the welfare and fitness of the poor, since “the language of eugenics was a language less of selection and genetics than of reform of public health.”

The scope of Latin American eugenics was never assumed to be limited to control over heritable conditions and human matings: anything that “improved the race” could have been defined as eugenic. The puericulture style of eugenics in Brazil focused on preserving offspring already born, while other Brazilian eugenicists—also in the fashion of their French counterparts—employed medical knowledge about soft heredity in order to argue that public health measures could raise the hereditary fitness of the community. Particular emphasis was placed on the action of the so-called racial poisons, especially alcohol, which were

British public health service were not as dependent upon eugenics to legitimize their work, although as I shall argue in Chapter IV they may have used it in trying to enhance their prestige and expand their domain of expertise.

43The slogan of Brazilian eugenics was “to sanitize is to eugenize.” Stepan, “Eugenics in Brazil,” pp. 130 and 119.

44Ibid., p. 122. As used in this context the term “race” was not intended to imply ethnicity or colour but instead referred to improving the “Brazilian people,” or more specifically the working population. The creation of a “racially homogenous” nation was believed to be happening without any eugenic interference, whereas ameliorating the health of “the Brazilian race” constituted the essence of the eugenic programme. Yet public references to the diseased or degenerate “Brazilian people” were privately understood to mean the “black race” at the bottom of the social stratum (p. 126).

45Ibid., pp. 111 and 120. Unlike Schneider, Stepan acknowledges that these medical eugenicists “were unconsciously rather than consciously neo-Lamarckian in their genetic assumptions” (p. 130). As the references to puericulture and Lamarckism suggest, the national style of Brazilian eugenics was in fact directly derived from French writings. Stepan therefore argues for a distinct “Latin” style of eugenics characteristic of the countries represented in the Fédération International Latine des Sociétés d’Eugénique during the 1930s, which included not only the Latin and South American nations but also France, Italy, and Romania.
presumed to alter the germ plasm of drinkers and their progeny. The eugenics movement therefore worked closely with the anti-alcohol campaign in Brazil, where prohibition, higher taxes on alcoholic beverages, and reformatories for drunkards were all promoted as eugenic measures. Alternatively, neo-Lamarckian heredity was sometimes interpreted in a more positive fashion in the Brazilian context: the race would also benefit if the strong constitutions acquired by individuals raised in a healthy environment became permanently fixed in the genetic material.

In short, then, the eugenics campaign in Latin American countries was considered to be just one of many approaches to reducing morbidity and mortality in both current and future generations. It appeared to be a more “benign” form of eugenics than for example the racist American policies against immigration and miscegenation, the Canadian and German laws for the sterilization of the unfit, or the Bolshevik plans to breed ideal human types through artificial insemination. As I shall argue next, a similarly milder approach to race betterment

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46 Stepan specifically discusses the uses of the racial poison theory in “The Hour of Eugenics,” pp. 63-101.

47 Stepan, “Eugenics in Brazil,” pp. 121-23. This more optimistic version of Lamarckism did not however appear in any British eugenic literature, since Edwardian public health reformers were by this time less concerned with sanitary medicine than with personal factors in the causation of disease. This distinction will be treated in more detail in subsequent chapters.

48 The American geneticist H. J. Muller during his time in the Soviet Union promoted a form of socialist eugenics that emphasized using genetic technologies in order to breed for a population “of the innate quality of such men as Lenin, Newton, Leonardo, Pasteur, Beethoven, Omar Khayyam, Pushkin, Sun Yat Sen, Marx. . . .” This was how Muller described his programme in his 1935 text Out of the Night. Mark Adams, “Eugenics in Russia, 1900-1940,” in Adams, ed., The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia (Oxford UP, 1990), pp. 179-82 and 193-96, quotation cited on p. 194. Although there is not sufficient space here to draw extensive comparisons with the eugenics
featuring assumptions about soft heredity and championed mainly by medical professionals can likewise be found in Great Britain. My goal will be to show that the received view of Anglo-American eugenics is unsuited not only to describing the nature of eugenics in other national settings, but also to understanding the complexity of eugenic thought in the British context itself. The received view overlooks the diversity of ideas about what counted as eugenics that existed in Britain during the first two decades of the twentieth century.

2. Heredity and Environment

Francis Galton himself provided a rather vague definition of the science he had founded in the late nineteenth century: in his words eugenics was "the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally." Many of Galton's early followers in the British Eugenics Education Society movement in Russia, it should be noted that according to Adams Russian eugenics was often considered to be a branch of public health, while in the pre-Lysenko era some eugenists advocated a Lamarckian scientific underpinning for their policies.

"Many characteristics of the "Latin" style of eugenics were even present in the race hygiene movement in Germany. Beginning in the 1890s, prominent racial hygienists such as Alfred Ploetz and Alfred Grotjahn included in their concerns about hereditary improvement the effects of racial poisons such as alcohol. The Gesellschaft für Rassenhygiene, founded in 1905, likewise listed among its goals "opposition to all germ-plasm poisons" and "introduction of favorable hygienic conditions for the industrial and urban population." About one-third of that Society's membership was made up of medical professionals, who would have perceived eugenics as falling within their domain of expertise as "custodians of the nation's health." Sheila Weiss, "The Race Hygiene Movement in Germany, 1904-1945," in Mark Adams, ed., The Wellborn Science: Eugenics in Germany, France, Brazil, and Russia (Oxford UP, 1990), pp. 23-24.

This was the definition Galton provided in his 1904 speech at the Sociological Society, published as "Eugenics: Its Definition, Scope and Aims," p. 43. In 1883, Galton had first introduced the word eugenics with the following equally broad definition: "We greatly want a
chose to interpret this definition quite broadly. Hence they included among the agencies affecting "racial qualities" not only genetic make-up but also many factors in the environment of the parent, fetus, infant, or child that might injure future generations. To give one example, the EES member Douglas White quoted Galton's definition verbatim in the course of asserting that venereal diseases deserved a "position of the highest importance" on the Society's agenda:

There may be some who consider that venereal disease ought not to be accorded any place in a strictly scientific discussion of eugenics, that eugenics ought to deal only with the transmission of innate qualities in the human germ-plasm, and not with its invasion by infective disease, which, even if it affects the germ-plasm, influences it from without, not from within. The present writer regards such a view as pedantic, even if strictly correct. . . .

As late as 1916, the biologist J. Arthur Thomson, one of the leading British authorities on the science of heredity and another EES member, similarly acknowledged that the field of eugenics might encompass the effects of both heredity and environment:

It is not always easy to distinguish what is in the strict sense inherited from what is due to ante-natal nurture; . . . nurtural effects though not transmissible may be in several ways of indirect racial importance.

In his widely cited 1908 textbook on heredity, Thomson addressed the specific problem of brief word to express the science of improving stock, which is by no means confined to questions of judicious mating, but which, especially in the case of man, takes cognisance of all influences that tend in however remote a degree to give the more suitable races or strains of blood a better chance of prevailing speedily over the less suitable than they otherwise would have had." Francis Galton, Inquiries into Human Faculty and Its Development (1883; London: Dent, 1907), p. 17.


hereditary alcoholic degeneration and asked whether it was caused by nature or nurture. He proposed that drunkards might give rise to defective offspring for any one of three reasons: pre-existing hereditary taint, the influence of being nurtured in an alcoholic home, or prenatal damage which he imprecisely referred to as a form of inheritance. In fact Thomson’s rather loose usage of the term “heredity” was typical of the early eugenists, who seemed far less interested in providing abstract definitions than in answering the practical question of whether parental alcoholism and other environmental influences posed a genuine threat to racial fitness. This attitude can also be seen in the work of William Charles Sullivan, medical officer to the prison in Liverpool and a Council member of the EES during its early years. Sullivan’s published investigations of the alcoholic ancestries and degenerate offspring of his prison inmates had revealed “in a very vivid and forcible fashion the important role which the alcoholism of women may play in racial deterioration.” He concluded that even if it were impossible to disentangle the hereditary, congenital, and nurtural influences of alcohol upon offspring, studies such as his were still valuable as demonstrating in total “the practical result of maternal drunkenness.”

Caleb Williams Saleeby, medical writer, temperance advocate, and founding member of the EES, was by far the most assiduous crusader for an expanded definition of eugenics that would encompass all possible influences on the well-being of subsequent generations of the race. As Saleeby pronounced in the preface to his very first book on “race culture,” eugenic

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policies ought not be restricted to reproductive selection alone, which could only aim to eliminate or propagate existing heritable traits in the population. Instead he urged his colleagues to recognize that in truth "everything that affects every possible parent is a matter of eugenic concern: and not only those factors which affect the choice for parenthood." Later in his career as a eugenist he grew even more impatient with his mainline associates’ inability to set aside the artificial nature-nature debate and to grant environmental factors the place they deserved on the agenda of the eugenics movement. His own policy was to ignore, with overt contempt, the endless, jejune, imbecile controversy as to the relative importance of nature and nurture, which usually occupies all the time at meetings of eugenic societies. . . . For true eugenics, not merely the mating of fine germ-cells but the making of fine people, we need both nature and nurture.  

Unlike other medical eugenists such as Sullivan and Thomson who tried to gloss over the nature-nurture distinction, Saleeby was thus quite explicit about his conviction that both components belonged within the realm of eugenics.

If then, beyond selecting for parenthood, it be desirable to take care of those selected—as for instance to protect the expectant mother from alcohol, lead, or syphilis—that is strict eugenics on any definition worth a moment's notice.

He made much the same argument in a paper read before the Sociological Society in 1909. All social reformers could justifiably call themselves eugenists if it were agreed for instance that mothers who drank to excess or worked in lead factories posed a threat to the race because they exposed their unborn offspring to these poisonous influences. "Such cases as


these, I maintain, are essentially of the business of Eugenics, and one may allow oneself to believe that if the term be thus adequately defined, we are all Eugenists in some measure."

Other non-mainline proponents of eugenics, many of whom will be named in the following sections, likewise assumed that more than just heritable traits could be of racial importance. They proposed that certain kinds of diseases and toxins could act upon the individual organism pre- or post-natally, producing either transmissible or non-transmissible forms of degeneracy. Although few of these writers were concerned to make distinctions between the various possible environmental influences on parent and child, here I shall identify two popular versions of "Lamarckian" eugenics, neither of which involved true inheritance of acquired characteristics. First was the concept of direct damage to the hereditary material by some toxic agent to which parent or offspring had been exposed. Saleeby labelled such agents "racial poisons" and listed as the most serious alcohol, lead, and syphilis. As he explained this theory in the simplest possible terms, "alcohol may spoil germ-cells as it may spoil liver-cells." Second, many eugenists emphasized the importance of the "nurture and education of the individual from conception onwards." They implied that eugenic programmes should aim to prevent congenital as well as hereditary defects by protecting expectant mothers from alcohol and malnourishment, and they addressed the ways in which a moral upbringing and a healthy home environment might contribute to the

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production of a vigorous race.

The following analysis of the various versions of soft hereditarian and non-hereditarian eugenics will rely most heavily upon Caleb Saleeby’s texts, in which all of the possible effects of parental drinking on offspring were spelled out most precisely. Saleeby coined the phrase “preventive eugenics” to describe those measures, “by far the most important of all,” that would protect parents and offspring from germinal corruption caused by the racial poisons. Preventive measures such as anti-alcohol teaching stood alongside positive and negative methods of selective breeding in Saleeby’s category of “primary eugenics.” In later writings he added a second category of “nurtural or secondary eugenics,” which dealt with all deleterious influences on offspring pre- and post-natally. After examining in the next sections the question of what counted as Lamarckian eugenics—of both the preventive and nurtural types—I shall then move on to identify some of the medical supporters of eugenics who were most likely to have utilized these non-mainline ideas.

*Lamarckism versus Blastophthoria*

By the turn of the century most Anglo-American biologists had rejected the formerly popular belief that traits acquired during the lifetime of a parent could somehow be transmitted to offspring. The most compelling argument against the inheritance of acquired characters had been put forward in 1892 by the German biologist August Weismann, with his

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61Saleeby “Imperial Eugenics,” p. 396. He was never entirely consistent however about where ante-natal injury to the fetus, caused by maternal drinking, malnourishment, or exhaustion, was supposed to fit into the primary versus secondary scheme.
theory of the continuity of the germ plasm.\textsuperscript{62} Weismann suggested that reproductive (germ) and bodily (somatic) cells remained entirely separate during the development and life span of all organisms, so that changes acquired by the parental soma could not possibly affect the material that would be inherited by the offspring.\textsuperscript{63} Yet despite widespread acceptance of this doctrine by around 1900, the Lamarckian theory of heredity continued to find a significant base of support within the medical community and at least on the margins of the scientific community up until the 1930s.

Seeking alternative mechanisms of heredity and evolutionary change, several researchers in Europe and the United States continued to try to demonstrate experimentally the transmission of acquired characters even after followers of Weismann had declared the theory discredited.\textsuperscript{64} The most famous piece of research was the Austrian biologist Paul Kammerer's findings on the midwife toad, which were soon revealed to have been

\textsuperscript{62}As early as 1865, Galton had stated a version of the anti-Lamarckian doctrine of the continuity of the germ plasm. In 1869 he began a series of experiments performing blood transfusions and crossings between rabbits of different colours, in order to test his cousin Darwin's hypothesis of pangenesis. Galton found this theory of heredity attractive except for its attempt to provide a mechanism for inheritance of acquired characters. His negative results were interpreted as a refutation of both pangenesis and the most likely mechanism of Lamarckian heredity. Ruth Schwartz Cowan, "Nature and Nurture: The Interplay of Biology and Politics in the Work of Francis Galton," \textit{Studies in History of Biology} 1 (1977): 142 and 169-71.


\textsuperscript{64}For a summary of some of the research programmes that attempted to prove the reality of Lamarckian heredity, see Richard Burkhardt, "Lamarckism in Britain and the United States," in E. Mayr and W. Provine, eds., \textit{The Evolutionary Synthesis} (Cambridge: Harvard UP, 1980), pp. 343-51; and Bowler, \textit{Eclipse of Darwinism}, pp. 75-106.
fabricated. On the other side of the coin, the theory of inheritance of acquired traits was never submitted to any clear experimental refutation. Instead it would seem that the majority of British and American biologists simply lost interest in Lamarckian heredity, as Mendelism and Darwinism were increasingly accepted as the theoretical foundations for most research on problems in heredity and evolution.

Regardless of what attitudes towards soft heredity may have been in the Anglo-American scientific community, there can be no question about the fact that many lay and medical writers still clung to various notions about how environmental factors might produce changes that could become fixed in the hereditary material or otherwise affect offspring. The Lamarckian belief that acquired diseases or other somatic defects could be passed on to children was rarely cited in twentieth-century eugenic texts. But by focusing specifically on notions about “alcoholic heredity” it will be seen here that various other theories of soft heredity prevailed in eugenic discourses during the Edwardian era. One of these theories was deliberately advanced as an alternative to the more dubious Lamarckian doctrine. In the 1890s the Swiss psychiatrist Auguste Forel had proposed an explanation for clinical observations of hereditary alcoholic degeneration that he termed “blastophthoria.” Forel’s theory expressed in more precise pathological terms the widely espoused idea that poisons

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67 From the Greek *blastos*, bud or germ, and *phthora*, destruction or deterioration.
such as alcohol could produce new heritable traits by directly altering the germ plasm of the drinker or his offspring. During the early 1900s, this idea was propounded under the rubric of the "racial poison" theory popularized by Saleeby and other medical eugenists in many countries.

Forel described blastophthoric degeneration, or deterioration of the germ, as a kind of "false heredity." He speculated that it involved a perturbation of the protoplasm of unconjugated germ cells, and that these changes were then transmitted to the embryo developed from one of these cells. In this fashion blastophthoria might originate "hereditary stigmata," but it was not itself a form of heredity since it did not involve the recombination and reproduction of ancestral traits. Forel singled out alcoholic intoxication as the commonest example of germ poisoning. Once the "hereditary determinants" of the father had been pathologically deranged by his drinking, this altered germinal protoplasm would "menace several successive generations" by giving rise to mental illnesses or other heritable taints. Forel also argued that developing embryos might be affected by parental diseases such as alcoholism and syphilis, citing for example statistical studies which showed that acute intoxication at the time of conception was associated with an increased rate of birth defects.

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68 Auguste Forel, *The Sexual Question: A Scientific, Psychological, Hygienic and Sociological Study for the Cultured Classes*, trans. C. F. Marshall (London: Rebman, 1908), pp. 36-37. Forel provided a physiological account of germinal poisoning that was every bit as speculative and full of neologisms as Weismann's theory of heredity with its "determinants" and "ids." In Forel's words, "blastophthoria deranges the mneme or hereditary engrams, and consequently a more or less considerable part of their ephorias during the life of the individuals which arise from them" (p. 36).

The theory of blastophthoria did not address the question of whether there might be a transmitted tendency to a craving for drink, but rather it tried to account for why heavy drinking so often appeared as an antecedent of hereditary taint in family lines. These constituted two distinct theories of alcoholic heredity, and as will be seen later a conflict of opinion as to which of these consequences of parental alcoholism was more important from a eugenic standpoint formed the crux of the 1910 controversy between Karl Pearson and the temperance doctors. Forel and his British followers such as Saleeby were not particularly interested in investigating the etiology of the drink habit itself or preventing the births of more habitual drunkards. They assumed that a much more serious issue was the destruction of previously healthy stocks by alcohol and other toxic influences. Forel himself denied that habitual inebriety was an inherited condition and argued instead that drinking posed a threat to the race only when there was "intoxication of the germs," so that "the children resulting from their conjugation [would] become idiots, epileptics, dwarfs or feebleminded."70

Writing in 1908, Forel also carefully distinguished between blastophthoria and the corruption of the hereditary material by alcohol occurred mainly where there was long-term "soaking" of the tissues by chronic alcoholics. But some writers, especially those sympathetic to the teetotal movement, suggested that even conception during acute intoxication, or in other words during occasional bouts of drunkenness, might result in degenerate offspring. A researcher named Dr. H. Hoppe later tried to do experiments with dogs to confirm this theory about the deleterious effects of intoxication during mating. He reported however that his experiments had to be abandoned because "when the male was given alcohol, he sat stupid beside the sober female; and the alcoholized female would not tolerate the approaches of the sober male, and they did not copulate at all." H. Hoppe, "Procreation during Alcoholic Intoxication," British Journal of Inebriety 8 (1911): 146-50.

Lamarckian doctrine that had been repudiated by Weismann. In this he was succeeded by Caleb Saleeby, who chastised his fellow eugenists for their conflation of the scientifically respectable racial poison theory with the questionable Lamarckian belief that damage to the parent's body produced by habitual drunkenness could somehow be inherited by the children. Saleeby discussed the latter theory at some length in a 1905 popular text he produced on the science of heredity. Here he pronounced that the Lamarckian question could only be tested by observational and experimental methods, and not on the a priori grounds of Weismannism. Despite being a disciple of the evolutionist Herbert Spencer, one of the leading nineteenth-century defenders of Lamarckism, Saleeby had to conclude that so far very little evidence pointed to the reality of inheritance of acquired characters and that this mechanism had not likely been very important in organic evolution anyway. In his subsequent eugenic writings, he took pains to distance his own ideas from true Lamarckism. Saleeby argued that medical and legislative efforts ought to focus on the problem of preventing blastophthoric degeneration, rather than relying on unrealistic Lamarckian hopes for evolutionary progress through environmental improvements. A few years later though, influenced by Kammerer's seemingly rigorous experimental research, Saleeby spoke more favourably about the inheritance of acquired characters and other alternative theories that

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71Ibid., pp. 34-35.


73Saleeby, Parenthood and Race Culture, p. 155.
suggested a "creative force" in evolution.\textsuperscript{74}

According to Saleeby, opposition to Forel's ideas in Britain rested partly on a misreading of Weismann's theory of the continuity of the germ plasm. Ironically, Saleeby and Forel both cited Weismann as having been the first to provide an account of blastophthoria. They alluded to one section of his 1892 book where Weismann admitted that hereditary determinants could never be entirely protected from extraneous influences and that alcohol might therefore prove harmful to the ovum or sperm cell.\textsuperscript{75} Weismann had further acknowledged that the effects of such poisoning constituted a separate issue from any considerations of heredity \textit{per se}, including the controversy over inheritance of acquired characters. As Saleeby put it, Weismann himself thus did not fall into the trap of confusing a functionally produced modification such as "the hypertrophy of the blacksmith's biceps with, say, the consequences of soaking the entire organism for years in the poisons of syphilis, or alcohol, or salts of lead."\textsuperscript{76}

Saleeby further complained that his fellow eugenists' general lack of interest in the racial poisons was due to the fact that the British "lagged behind" in the field of experimental toxicology.\textsuperscript{77} Continental and American researchers were carrying out virtually all of the


\textsuperscript{75}Weismann, \textit{The Germ-Plasm}, pp. 386-87.


\textsuperscript{77}\textit{Ibid.}, p. 39.
clinical, microscopic, and experimental work on alcohol- and lead-induced blastophthoria.\footnote{The most comprehensive bibliography of research on alcoholic degeneration and blastophthoria was compiled in 1924 by the American eugenicist Samuel Holmes, even though by that time the whole idea of alcohol as a dysgenic agent had gone out of fashion. This author surveyed all of the literature in English and several European languages, from the 1880s to the 1920s. Samuel J. Holmes, \textit{A Bibliography of Eugenics} (Berkeley: U of California P, 1924), pp. 185-208.}

For instance Saleeby cited a statistical study of over 5000 drinking and abstaining families, microscopic research on morbid changes to the testes and ovaries of hundreds of alcoholic adults, and experiments with alcoholized male dogs who had sired enfeebled pups. This research had been conducted by Finnish, Swiss, and French investigators, respectively, whereas prior to 1910 there had been only one well-known British study of the effects of parental drinking, Sullivan’s survey of the health of the offspring of 100 alcoholic female prisoners compared with the offspring of 20 of their sober relatives.\footnote{William Charles Sullivan, “A Note on the Influence of Maternal Inebriety on the Offspring,” \textit{Journal of Mental Science} 45 (1899): 489-503. Sullivan found that 55\% of the children of the drinkers had died, whereas the sober female relatives of these women lost 24\% of their children. Because members of each group had come from the same families, it was unlikely that the cause of higher mortality among the drinkers was a pre-existing hereditary taint. His data also showed that the children born later, as their mothers’ alcoholism grew progressively worse, suffered the highest mortality rate, and that children born immediately after periods of enforced sobriety (owing to imprisonment during pregnancy) were the least likely to perish. For the next decade Sullivan’s was regarded as one of the most carefully conceived and thoroughly persuasive studies ever carried out on the topic of maternal alcoholism. But as Saleeby further noted, such studies of female drinkers could never give definite evidence of germinal poisoning since it could be argued that the injury to offspring occurred after conception, while the offspring was in the womb.} Saleeby stated that given British eugenists’ lack of interest and confusion over the idea of alcoholic degeneration, he had to count on the French Lamarckians to do the necessary research on the
Alfred Tredgold was the only other British eugenist who made explicit reference to Forel's theory of blastophthoria or "germ corruption." Tredgold, a psychiatrist who served as consulting physician to the National Association for the Care and Control of the Feeble-minded, compiled a large collection of family histories illustrating the great eugenic threat of the feebleminded. His investigations appeared to confirm widely held beliefs about the "blood relationship" of a whole class of hereditary defectives, including aments, lunatics, criminals, paupers, alcoholics, prostitutes, and consumptives. He interpreted all of these problems as symptoms of existing hereditary degeneracy, manifested in numerous forms from generation to generation. As a committed eugenist, Tredgold proselytized on the urgent need to cut off these defective stocks by means of permanent segregation. His anxieties about the spectre of national decline typified the rhetoric of mainline eugenics. For instance after reciting vital statistics on the excessively high birthrate of degenerate families taken from the reports of the Registrar General, he went on to urge that "if this alarming propagation is not checked the time must inevitably come, if it has not already come, when our nation will contain a preponderance of citizens lacking in that intellectual and physical

80 Saleeby, Progress of Eugenics, pp. 242-43; and "Eugenics and Dysgenics in Relation to Alcohol," pp. 1-8.

81 Alfred F. Tredgold, Mental Deficiency (Amentia), 4th edn. (London: Baillière, Tindall and Cox, 1922), p. 36. In 1895, the social Darwinist J. B. Haycraft had also cited Forel's theory as an alternative to inheritance of acquired characters. Haycraft, Darwinism and Race Progress, pp. 70-76.

82 Tredgold, "The Feeble-minded—A Social Danger," pp. 98-99. He was also a member of the EES's Research Committee on Pauper Pedigrees.
vigour which is absolutely essential to progress."\textsuperscript{83} Tredgold always promoted negative eugenics first and foremost, yet he was aware that his pedigrees of degenerate families might also be relevant to a more preventive approach to race betterment. In particular, he suggested that feeblemindedness and other mental defects in one generation might owe their origins to drinking and disease in the parents or ancestors.

Tredgold thus insisted on the environmental causes of pathological germinal variations, even while acknowledging that this opinion was regarded as "highly heterodox by many biologists."\textsuperscript{84} His theory of degeneration presumed that the germ plasm was by no means entirely immutable: reproductive cells were just as susceptible as other cells in the body to toxins circulating in the parental bloodstream. Tredgold's 1908 text on mental deficiency listed a long series of early-century statistical and experimental studies purportedly demonstrating the influence of alcohol and lead on reproductive cells. But unlike most other doctors and social reformers who wrote on alcoholic degeneracy, Tredgold always clearly distinguished between the hereditary and environmental etiologies of mental defect. He was willing to assign racial importance to environmental factors only as the ancestral source of heritable variation. He stated unequivocally that the vast majority of cases of amentia were

\textsuperscript{83}\textit{Ibid.}, p. 101. Tredgold wrote numerous popular and scientific essays on eugenics and impending national decline, in which he unashamedly proclaimed that civilization's tendency to promote the propagation of the biologically unfit lay at the root of costly social ills such as mental illness, pauperism, and crime. Tredgold, "Eugenics and the Future Progress of Man," \textit{Eugenics Review} 3 (1911-12): 94-117. He also contributed to the popularization of eugenics with several pieces in the \textit{Quarterly Review}.

\textsuperscript{84}Tredgold, \textit{Mental Deficiency}, p. 30. He even made the Lamarckian sounding pronouncement that "the environment of today becomes the heredity of tomorrow" (p. 36).
attributable to heredity—to a pathological condition of the germ plasm—while only rarely did external factors come into play by modifying the brain of the offspring either after conception or after birth. In his estimation, “biased” temperance advocates had been careless in exaggerating the immediate environmental causes of degeneracy, such as alcohol consumption by the mother during pregnancy.  

*Nurtural Eugenics and Race Motherhood*

By no means were Saleeby and Tredgold the only members of the Eugenics Society who expressed special interest in the problem of hereditary alcoholic degeneration and blastophthoria. For instance Dr. William Potts, another leading authority on the problem of mental deficiency and a member of the Birmingham branch of the EES, outlined the state of scientific knowledge about alcohol as one of the origins of congenital mental defect. He cited experimental research on embryonic and pre-embryonic life, as well as social studies confirming that “hereditary taint of drunkenness exists among inebriates, epileptics, idiots, and criminals.” Similarly the EES’s second president Montague Crackanthorpe, summarizing in 1909 the work to be carried out by the new biologically oriented reform movement, listed alcoholism first among the specific problems of interest to eugenists, followed by feeblemindedness, heritable diseases, and positive eugenics. He cited both J. A. Thomson and A. F. Tredgold as his authorities on the transmissibility of environmentally

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induced modifications, a concept which he considered relevant to the study of alcoholic degeneration and not at all inconsistent with Weismann's doctrine. Although the eugenic creed normally emphasized the strength of nature over nurture, Crackanthorpe insisted that exposure of parents to alcohol and other racial poisons be recognized as an exception to this rule. In particular he recommended instituting pre-marital health examinations that would target not only hereditary diseases but also drinking habits in prospective parents. His explanation emphasized the possible racial consequences of germinal poisoning:

Given a man or woman of intemperate habit, what will be the effect on the possible children if he or she marries?... If it [the habit] has been allowed to penetrate so deeply as to affect the germ cells as well as the somatic cells of the parent then it is almost certain that the children will be affected also. There will be transmitted to them a constitutional weakness, which will sooner or later express itself in some form of degeneracy.... Not until such persons can show a clean bill of health should they be allowed to propagate their kind under the sanction of law or Church.87

Forel's theory of alcoholic degeneration implied a "strict parity between fatherhood and motherhood," in that it presumed that male and female germ cells were equally susceptible to outside influences.88 As Saleeby and others therefore realized, the only way to distinguish true blastophthoria from other possible effects of parental drinking was to experiment on alcoholized male animals. In the case of the female, the pathological effects of exposure to alcohol were as likely to occur during the gestation period as before or at the moment of conception. This increased chance of causing damage to unborn offspring also meant that

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88Saleeby, "Racial Poisons. II. Alcohol," p. 44.
pregnant women and mothers who used or abused alcohol found themselves subjected to much more intensive scrutiny from eugenists and public health reformers than did male alcoholics. An obvious gender bias consequently characterized most eugenic discourses on the effects of the racial poisons. This bias had both biological origins in the facts of maternity and social origins in the Edwardian ideology of maternalism.

Feminist historians such as Anna Davin and Jane Lewis have identified the Edwardian conception of women as "race-bearers" as the key to understanding the social policy directions taken by both the early eugenics and infant welfare movements. The ideology of race motherhood aimed to elevate the status of women and domesticity, on the grounds that women's labour in the home was of vital national and racial importance. The bearing and rearing of the next generation of the Imperial race were, as one eugenic feminist put it, "the influential, exacting and responsible duties entrusted to the women of the world." At the same time, however, this maternalist ideology served as a means of reinforcing conservative attitudes about appropriate gender roles. Women were treated as if they alone were responsible for reproducing and nurturing the next generation of the race. They were to serve primarily as suppliers of population and their activities restricted as far as possible to the domestic sphere.

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One particularly glaring example of how the ideology of maternalism shaped public health and eugenic responses to female alcoholism was the biased fashion in which female drunkards were treated under the 1898 Inebriates Act. Women comprised 81% of the 4500 lower-class inmates sentenced to the 14 state and certified inebriates reformatories that operated between 1899 and 1913.91 Authorities such as the reformatory Inspector Robert Welsh Branthwaite presumed that extreme alcoholism in women was a more serious eugenic problem than in men, since a higher proportion of convicted female inebriates were married and their fertility rates were above the norm for the rest of society.92 Their rationalization for this policy thus focused on women’s expected role as child bearers and rearers. Even some mainline eugenists argued that habitual drunkards ought to be segregated indefinitely not only in order to prevent them from propagating their defective germ plasm, but also because these women lacked the “mental power” to support themselves or care for their children adequately.93 Such concerns for the welfare of children or the race apparently did not apply

91See especially G. Hunt, J. Mellor, and J. Turner, “Wretched, Hatless, and Miserably Clad: Women and the Inebriate Reformatories, 1900-1913,” British Journal of Sociology 40 (1989): 244-70. To put this 81% figure into perspective, statistics from the 1890s indicated that almost four times as many men as women were annually sent to prison for drunkenness (112,000 men to 33,000 women). Despite the fact that male drunkenness was clearly a much more serious social problem, the sex ratio for convictions to the inebriates reformatories was just the reverse. Leon Radzinowicz and Roger Hood, “Curing and Restricting the Habitual Drunkard,” in A History of English Criminal Law and its Administration from 1750 (London: Stevens, 1986), vol. 5, p. 301.


93Amy Barrington, Karl Pearson, and David Heron, A Preliminary Study of Extreme Alcoholism in Adults, Eugenics Laboratory Memoir XIV (Cambridge UP, 1910), p. 43.
to male alcoholics, who much more rarely found themselves subjected to long-term confinement in special institutions for those labelled habitual inebriates. Whereas most men who were arrested for drunkenness offences continued to serve short prison terms, a larger number of women were sent away for a minimum 12-month to a maximum 3-year sentence under the provisions of the Inebriates Act.  

During the nineteenth century, concerns about the deleterious effects of alcoholism on offspring had constituted just one of many medical, moral, and economic arguments for abstinence put forward by British temperance advocates. After 1900, however, a “new critique of alcohol” emerged which emphasized its importance as a racial and public health

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94 Magistrates and physicians who studied the problem of inebriety also suggested that female drinkers were more in need of long-term medical and moral treatment because they were weaker than men and therefore more susceptible to extreme intoxication. Cited as the paradigmatic case of the female chronic drunkard was the notorious Jane Cakebread, who by the age of 65 was reported to have appeared in police court 278 times for public drunkenness. Such women were seen as “monstrous” and unfeminine, having sunk to the most degraded level. Branthwaite for instance described the female patients he saw regularly as belonging to “the heavy, repulsive, masculine type, with a tendency to violence and brutality, beady eyes, square jaws, and dull, flabby expressionless face.” Their selective confinement clearly owed much to their failure to live up to accepted standards of femininity in appearance and behaviour. Many were not “real women” in that they had no family responsibilities: they were unmarried, lived apart from their husbands, or worked as prostitutes. Those who did have families made bad mothers who raised defective, malnourished, and neglected offspring. Magistrates also expressed reluctance to commit the breadwinning male heads of households to such extended reformatory sentences. On the other hand, they presumed that families would get along better without the destructive influence of a drunken wife and mother. Hunt, et al., “Wretched, Hatless and Miserably Clad,” pp. 250-52; Lucia Zedner, Women, Crime, and Custody in Victorian England (Oxford: Clarendon, 1991), p. 233. The passage from Branthwaite’s 1907 Report as Inspector of the Inebriates Reformatories is quoted by Cheryl Krasnick Warsh, “Oh Lord, pour a cordial in her wounded heart’: The Drinking Woman in Victorian and Edwardian Canada,” in Warsh, ed., Drink in Canada: Historical Essays (McGill-Queen’s UP, 1993), p. 88.
issue, especially where women and children were involved. The national “drink problem” became intimately bound up with issues of empire, efficiency, and national fitness, as well as with the ideology of maternalism. Edwardian writers identified unfit motherhood as the principal cause of the physical deterioration and high rates of infant mortality found among the urban labouring classes. Women’s drinking habits, frequent employment outside the home, and ignorance of proper techniques of infant feeding and household management were consistently blamed for the poor physical and mental state of their offspring.

As one medical member of the EES put the argument for women’s responsibility as race mothers, the chief cause of most social ills “is bad and often vicious parentage. Ignorant, neglected and diseased motherhood is poisoning the race.” The majority of Edwardian state and philanthropic efforts at improving the health of the people therefore focused on reforming the quality of maternal care, especially by means of educating girls and young housewives of the working classes in the skills of “mothercraft.” In devoting special attention to the problem of maternal negligence, especially alcohol use by pregnant and nursing women, eugenists such as Saleeby similarly relied heavily on educative remedies for racial degeneration. Some eugenic literature advocated drink control legislation or marriage

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restrictions on alcoholics. But most writers preferred to believe that future generations could be rescued from the evils of alcohol mainly by means of medical and scientific instruction.

Knowledge about the health risks of heavy consumption were delivered to parents and future parents through the efforts of temperance organizations, public health authorities, and even the Board of Education.  

Edwardian social activists believed that alcohol consumption and insobriety were on the rise among the nation’s women. This impression seemed to be supported by police statistics, social investigations, and anecdotal evidence cited by temperance advocates and other authorities on drink problems. It was claimed for example that convictions for public drunkenness and mortalities from alcoholic excess among women had doubled between 1892 and 1901. One group said to be frequenting the public houses at an alarming rate were the

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young female factory employees, who imitated the bad habits of their male co-workers by spending their excess income on the luxury of drink. A more sympathetic view of lower-class drinking habits acknowledged that housewives and female labourers naturally sought relief in the bottle from the exhaustion, monotony, hunger, and squalid conditions of their everyday lives.  

The common assumption that a drunken mother posed a greater threat to the well-being of her children than did a drunken father had biological as well as ideological roots. Experimental and pathological evidence suggested not only that alcohol had a special affinity for unfertilized germ cells, but also that it might damage offspring at the embryonic or fetal stages. For instance in the 1890s a French researcher named Charles Féré had subjected hen's eggs to alcohol fumes and produced a large percentage of congenital deformities. Another oft-cited authority was Professor Taavetti Laitinen, a temperance proponent from Helsinki who was much admired by Saleeby. Laitinen had found that in animal and human subjects even small doses of alcohol taken during pregnancy could lead to lowered resistance

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101 Mary Scharlieb, “Alcoholism in Relation to Women and Children,” in T. N. Kelynack, ed., *The Drink Problem in its Medico-Sociological Aspects. By Fourteen Medical Authorities* (London: Methuen, 1907), p. 179. Women from the better classes were less likely to have their drinking practices scrutinized by eugenists or public health reformers, since their alcohol use was generally more discreet and less often resulted in displays of public drunkenness. The 1899 report of the Royal Commission on Liquor Licensing Laws did however include testimony on how women of all social classes were able to acquire alcohol through licensed grocers. Wright and Chorniawry, “Women and Drink in Edwardian England,” pp. 122-23.
to infectious disease in the descendants.\textsuperscript{102} Other workers reported finding alcohol in the blood and especially the nervous tissue of animal and human fetuses.\textsuperscript{103}

In Britain, research on maternal alcoholism and other causes of birth defects was conducted in the name of both medical science and eugenics by the Edinburgh obstetrician John Ballantyne.\textsuperscript{104} In addition to his own extensive experience with ante-natal pathology and teratology, Ballantyne summarized the results of continental research proving that alcohol could indeed pass into fetal tissues, inducing stillbirths and monstrosities. He postulated that alcohol exerted its evil influence on ante-natal life mainly by producing kidney disease in the mother, which in turn led to malfunctions of the placental filter so that alcohol and other toxins could more easily pass into the fetal system.\textsuperscript{105} Other British doctors and reformers agreed that maternal drinking was an especially potent cause of infant fatalities

\textsuperscript{102} Taavetti Laitinen, \textit{The Effects of Alcohol on Resistance to Disease and Offspring}, International Series No. 8 (Westerville, Ohio: American Issue, 1907); and “Influence of Alcohol on Immunity,” \textit{British Journal of Inebriety} 7 (1909): 61-106.


and birth defects, but they were less clear than Ballantyne had been about the pathological explanation for these intra-uterine injuries. It was usually simply stated that alcohol ingested by the mother passed into the fetal circulation, where it could cause damage to the growing nervous system in particular. Alternatively, some writers proposed that drinking, overwork, and poor nutrition during pregnancy might combine to weaken the mother’s own organs and functions, thereby reducing her baby’s chances of being born entirely healthy. According to one typical description of pre-natal poisoning, alcoholic mothers were “probably giving birth to neurotic, vicious children, tainted with alcoholism and disease, large numbers of whom should they survive neglected infancy, will grow up weak and rickety.”

Caleb Saleeby had been a medical student of Ballantyne’s and shared his interest in ante-natal pathology as it related to the problems of infant mortality and racial deterioration. Both doctors pointed out that contamination of the growing tissues of the unborn infant was a process entirely distinct from blastophthora and true heredity. They argued that drinking by expectant mothers was especially hazardous owing to the fact that the developing organism was less resistant to racial poisons than was the germ plasm itself. Both further agreed that this aspect of “maternal nurture” ought to be included within the province of practical eugenics. For eugenists to decline to deal with expectant motherhood was, as Saleeby put it, “to declare that eugenics is concerned with bringing the right gametes together, but does not 

trouble itself about what may or may not happen to the product of their conjugation.\textsuperscript{107}

Ballantyne likewise believed that considerations of racial health ought to take into account ante-natal factors as well as bad heredity. Discussing the new scientific field of eugenics, which he participated in as a charter member of the Edinburgh branch of the Eugenics Education Society, Ballantyne declared himself to be

not so much impressed with the hereditary dangers (using the term hereditary in its strict sense) in the problem of well-begetting as . . . with those that arise during the period of pregnancy, during the lives of the parents before and after marriage, and in the lives of the grandparents.\textsuperscript{108}

The medical theory of ante-natal poisoning can also be construed as a further legitimization of the maternalist assumption that the mothers of the nation were chiefly responsible for the crisis of physical deterioration. This theory made a better fit with the conservative ideology of race motherhood than did either Lamarckism or blastophthoria, and hence it was more often cited than these other two theories in early-century discourses on eugenics and infant mortality. Even Saleeby, the most vigorous proponent of the sex-neutral theory of germinal corruption and author of a eugenic slogan which called for the "protection of parenthood" in general from the racial poisons, consistently implied that the effects of maternal drinking must be much more serious than any amount of paternal drinking.\textsuperscript{109} This prejudice was further justified by adding yet another version of nurture into the eugenic

\begin{footnotesize}
\textsuperscript{107}Saleeby, "Racial Poisons. II. Alcohol," p. 45.


\textsuperscript{109}See for example Caleb Saleeby, "Professor Karl Pearson on Alcoholism and Offspring," \textit{British Journal of Inebriety} 8 (1910): 61.
\end{footnotesize}
equation, namely "maternal inefficiency," or inadequate care of infants and children.

Saleeby and other eugenists recognized that the risks of female alcohol use were compounded by the fact that for both biologically and socially constructed reasons mothers had far more intimate and prolonged contact with their children than did fathers, including after their birth. What Saleeby termed "maternal environment" was thus included as a crucial component of eugenics, one which he himself increasingly emphasized once he perceived hostility and prejudice towards his favoured theory of germ cell lesions. Another of Saleeby's eugenist colleagues who focused her efforts on nurtural eugenics was Dr. Mary Scharlieb. In lectures and articles produced for the eugenics, infant welfare, and anti-alcohol crusades, Scharlieb drew particular attention to the issue of alcohol's relation to breastfeeding. She warned that alcohol consumed by new mothers easily found its way into breast milk and lowered its nutritional quality. This latter point contradicted popular medical advice on the virtues of consuming stout or porter in order to improve the quality and quantity of breast milk. Once again Saleeby most clearly stated the eugenic relevance of this question: "We now pass away altogether from the question of heredity, but not from eugenics as a practical science. Whether through the placenta or through the mamma after birth, alcohol may reach the developing child via the mother. The practical eugenicist must

110Caleb Saleeby, "Alcoholism and Eugenics," *British Journal of Inebriety* 7 (1909): 18. One especially comprehensive summary of the ways in which both pre- and post-natal alcoholic pathologies were believed to precipitate "the dying out of the race" is Woodhead's 1906 paper "Alcoholism in Relation to Infantile Mortality," pp. 111-23.

therefore oppose maternal drinking, whether in the expectant or nursing mother.”

Scharlieb further noted that inebriate mothers were more likely to hand-feed their infants, thereby increasing the chances of early mortality. An alternative thesis which said that inability to nurse was often correlated with alcoholic habits in preceding generations also proved quite popular in the British anti-drink and eugenic literature. A Swiss professor of physiological chemistry and temperance advocate named Gustav von Bunge had discovered that failure to breastfeed was often due to physical inability on the part of women whose fathers had been alcoholics.

In addition to addressing the effects of the racial poisons on the fetus and the newborn, Saleeby’s notion of nurtural or secondary eugenics also took into account women’s unique responsibility for rearing and teaching the next generation of the race. Alcohol presumably weakened the maternal instincts: thus it was expected that children raised in alcoholic homes would suffer from malnutrition and neglect, while they would be more likely to pick up the alcoholic habit themselves owing to parental example. Saleeby admitted that such considerations had nothing to do with the role of heredity in eugenics, and he even placed them outside the purely medical or scientific aspect of the eugenic question. The ways in which nurture and education might influence racial health fell within the domain of the social

\[\text{\textsuperscript{112}}\text{Saleeby, “Alcoholism and Eugenics,” pp. 16-17.}\]

\[\text{\textsuperscript{113}}\text{Gustav von Bunge, \textit{Alcoholic Poisoning and Degeneration} (London: A. Owen, 1905); Gutzke, “Cry of the Children,” p. 75.}\]

\[\text{\textsuperscript{114}}\text{Saleeby, “Racial Poisons. II. Alcohol,” pp. 48-49.}\]
investigator rather than the "student of living tissues."\textsuperscript{115} Nevertheless this question was of profound interest to medical members of the eugenics and infant welfare movements. They attributed infant deaths and degeneracy in the survivors to maternal ignorance and fecklessness, which included careless supervision by alcoholic mothers.

The various post-natal hazards of parental drinking were outlined by Mary Scharlieb and several of the other medical eugenists who will be mentioned in the next sections, such as W. C. Sullivan, Robert Jones, and E. W. Hope. Usually in a moralizing tone, these writers condemned lower-class women who habitually drank for being negligent in their ordinary domestic duties. Where large portions of the family's wages were wasted on beer and spirits, health visitors found the dwellings filthy and the surviving offspring ill-nourished and ill-clad. Children who had not received proper care at home tended to be more susceptible to disease and too listless and hungry to benefit from their schooling. Young children raised in an alcoholic home were also more likely to fall prey to accidents, especially when allowed to wander out into the streets. One writer stated that 90\% of the cases of child neglect brought to the attention of the authorities were due to drink.\textsuperscript{116} Perhaps the most extreme form of maternal negligence was the large number of infant deaths attributed to "overlaying," or


smothering in bed by drunken mothers.  

An intemperate mother set a bad example for her children where instead she should have been taking charge of their moral development. Mothers were blamed for introducing innocent young ones to the temptation of drink by giving them tastes of gin or brandy, which were still considered good for soothing a noisy baby or curing indigestion. The results of having alcoholic liquors pressed upon them at such an early age could even be deadly: Scharlieb for instance cited a case of hob-nailed liver found in a five-year-old girl at the Royal Free Hospital. At just this moment yet another medical response to the Edwardian crisis of infant mortality and physical deterioration was mounted: a campaign against the growing practice of taking babies and small children to the public house. In one sociological study of 23 London pubs over a four-day period, official government investigators reported that they had seen 39,000 women enter these establishments with 10,700 children in tow or in arms. Although it was certainly recognized that exposure to drink itself could injure child-life, the main worry about pubs was that young children might contract tuberculosis on their filthy, sputum covered floors. The resulting Children Act of 1908 thus forbade children

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under fourteen years of age from entering pubs and children under five from being given alcohol without medical orders. Some reformers would have liked to see the law go even further by banning women themselves from drinking establishments, or at least placing limitations on their access to alcohol by regulating grocers’ licenses and patent medicines.121 Finally, even in situations where it was only the husband who drank, middle-class reformers still managed to accuse the wife of precipitating the family’s problems. Presumably her poor housekeeping skills were to blame for her husband’s so-called “misery drinking,” in which he felt compelled to flee his chaotic household and seek comfort at the pub.122 In the words of one expert on eugenics and female alcoholism, the typical lower-class mother and housewife possessed an

appalling ignorance of everything connected with cookery, with cleanliness, with the management of children, [making her] one of the most helpless and thriftless of beings, and which therefore impels the workman, whose comfort depends on her, not only to spend his free time in the public house, but also tends to make him look to alcohol as a necessary condiment with his tasteless and indigestible diet.123

Racial Poisons, Infant Mortality, and Eugenics

The effects of maternal alcoholism on offspring both pre- and post-natally played a

121V. Kelynack, “Alcohol in Relation to Motherhood,” p. 25.


central role in discussions held by the three major Infant Mortality Conferences that took place in London between 1906 and 1913, as well as by the Society for the Study of Inebriety, a medical organization to which most of the doctors mentioned in this section belonged. The interrelated problems of alcoholism, infant mortality, and racial decay likewise received special attention from numerous EES members, first and foremost among them Caleb Saleeby. Concerns about the effect of environmental factors such as alcohol on the evolutionary progress of the race even translated into official Eugenics Society policies. In fact the very first action undertaken by the Society at its inaugural meeting in February 1908 was to pass a resolution protesting the impending closing of the London County Council reformatories for inebriates, on the grounds that “hundreds of chronic inebriate women will be set adrift in London, with an inevitably detrimental result to the race.”

The EES also sent a deputation to testify before the 1908 Departmental Committee on the Inebriates Acts. They submitted an official statement on the eugenic significance of female insobriety, which mentioned the following possible reasons for degeneracy in the offspring of habitual drinkers: “(a) The inheritance of nervous defect inherent in the parent. (b) Intra-uterine alcoholic poisoning in cases where the mother is an inebriate. (c) Neglect, ill-feeding, accidents, blows, etc.”

Not surprisingly, Saleeby revealed himself to have been the primary author of

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125 Report of the Departmental Committee Appointed to Inquire into the Operation of the Law Relating to Inebriates and to their Detention in Reformatories and Retreats, pp. 1059-60. Although in this memo the EES championed the racial importance of the pre- and post-natal effects of maternal alcoholism, along with the transmission of pre-existing germinal defect from alcoholic parents, elsewhere in its solicited testimony to this Committee the Society made no mention of the racial poison theory. The Society had responded to a written
this memorandum. He noted that while the EES felt comfortable including the ideas of hereditary inebriety and pre- and post-natal effects of maternal intemperance, he had deliberately omitted any mention of the more complicated and disputed issue of blastophthoria.\textsuperscript{126}

Several articles published in the first few volumes of the EES’s journal the \textit{Eugenics Review} examined the eugenic problem of racial poisoning, or damage to germ cells or fetus produced by alcohol, lead, syphilis, and other infectious disease. In addition to a comprehensive discussion by Saleeby himself of the dysgenic effects of parental alcoholism, articles on lead poisoning and venereal disease were featured among the Society’s earliest interests. Sir Thomas Oliver, Britain’s leading authority on the problem of industrial lead poisoning, described in his 1911 essay the central role he had played in the history of protective legislation for women. As he explained, his research on lead had helped to “emancipate” women from working in white lead factories, where they faced an increased risk of stillbirths, premature births, and enfeebled offspring. He cited recent experiments with chicken eggs and rabbits indicating that lead could indeed injure the developing embryo or fetus, either by direct absorption of the toxin from the mother’s system or by interference

\textsuperscript{126}Saleeby, \textit{Parenthood and Race Culture}, p. 278.
with ante-natal nutrition. Oliver stated that lead could affect the reproductive powers of both men and women, but he emphasized its special risks to pregnant women rather than its ability to harm reproductive glands or cause germ cell lesions in either sex. Although he himself never saw fit to join the EES, clearly the editors of the Society’s journal considered his area of expertise relevant to their programme for race betterment.

Syphilis as a racial poison was discussed in the first issue of the Eugenics Review by the London surgeon J. Ernest Lane. Lane asserted that sexually transmitted disease was the single social ill most deserving of attention from eugenists. Yet this paper provided no detailed discussion of the supposed racial effects of the syphilis poison, only stating that offspring could inherit the poison from infected parents. The bulk of the paper addressed the more general issues of preventing VD through education and providing more accessible hospital treatment. In his eugenic writings Saleeby had also briefly mentioned syphilis and gonorrhea as important racial poisons, along with alcohol and lead. He urged his fellow eugenists to campaign for the protection of parents and especially mothers from all toxic agents that might pass through the placental filter, including the syphilis organism, mercury,


129 The notion that the microscopic organism that caused syphilis might be “inherited” through the ovum or sperm had always been controversial but was not completely rejected until the 1930s. By this time it was agreed that most evidence supported transmission of the spirochaete during pregnancy instead. The history of various theories of “hereditary” syphilis, including inheritance of acquired characters and hereditary predisposition, has been told by Elizabeth Lomax, “Infantile Syphilis as an Example of Nineteenth Century Belief in the Inheritance of Acquired Characteristics,” Journal of the History of Medicine and Allied Sciences 34 (1979): 23-39, especially pp. 37-38.
arsenic, phosphorus, and perhaps nicotine. Gonorrhea was of concern mainly as a source of sterility, while syphilis was identified as the deadliest and most cruel of the racial poisons for its effects on innocent offspring. Another prominent EES member, J. Arthur Thomson, likewise commented briefly in his text on heredity about the "crime" of allowing syphilitic subjects to marry and give birth to offspring who would suffer even more severely than the parents had.

The notion that syphilis could injure subsequent generations of the population was also taken up in the final report of the 1904 Inter-departmental Committee on Physical Deterioration. This report was an important influence on the founding of the eugenics movement. Three of the medical witnesses to the Physical Deterioration Committee testified solely on the special topic of VD and its relation to unfit offspring: the pathologist Sir Frederick W. Mott, the eminent surgeon Sir Victor Horsley, and a representative of the Royal College of Surgeons Sir Alfred Cooper. The report of the Committee concluded that syphilis constituted an exception to the rule of non-inheritance of acquired characters, and that "the general effect of the evidence is to show that syphilis is an active agent in the production of congenital weakness and the degeneracy that accompanies it." The Committee called for a future royal commission on this delicate subject, which would help determine the exact

130 Caleb Saleeby, A Ministry of Health and the Racial Poisons (Birmingham: Templar Printing, 1918), pp. 3-4; and Progress of Eugenics, p. 221. However, Saleeby rejected the popular medical belief that tuberculosis could likewise affect the unborn child as a racial poison.

131 Thomson, Heredity, pp. 286-87.

extent of the evil, remedy inadequate hospital accommodations, and debate the feasibility of compulsory notification.

F. W. Mott, who was a long-time member of the EES and an elected member of its Council, had been instrumental in establishing the connection between syphilis and general paralysis of the insane while he worked as pathologist to the London County Asylums. In a 1913 paper presented to one of the infant mortality conferences, Mott outlined the various presentations of "congenital syphilis," ranging from stillbirths to epilepsy. He even believed that in rare cases the causal organism might be passed on to a third generation by a syphilitic daughter. He emphasized the fact that great advances had recently been made in medical-scientific knowledge about syphilis: in 1905 the causal organism had been isolated, after 1906 the Wassermann blood test was in widespread usage, and by 1910 Ehrlich had introduced salvarsan as an effective new remedy. Mott urged that infants born with the infection be administered immediate treatment, while all suspect women be tested with the Wassermann reaction in order to prevent them from giving rise to syphilitic offspring. He closed with an impassioned plea for the government to deal with venereal disease as a "problem of National efficiency," in the same way that medical services had been set up to

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133Mott explained that infection through the mother while in the womb often produced miscarriages, stillbirths, and infant deaths from convulsions or brain disease. Many children of syphilitic mothers were born apparently healthy yet developed serious diseases later in life, such as progressive blindness, deafness, and lesions of the bone, skin, or viscera. Other signs of transmitted syphilis included stunted growth, facial stigmata, genital infantilism, imbecility, juvenile GPI, locomotor ataxy, and epilepsy. F. W. Mott, "Congenital Syphilis as a Cause of Infant Mortality and the Preventive Measures Necessary," Report of the Proceedings of the English-Speaking Conference on Infant Mortality (London: National Association for the Prevention of Infant Mortality and for the Welfare of Infancy, 1913), pp. 385-94.
attack the tuberculosis problem.\textsuperscript{134} This would entail both improved hospital services and state or municipally run medical laboratories.

In 1909 the Eugenics Society itself devoted two special meetings to the topic of venereal disease, and in 1912 a joint committee of inquiry was formed with the Royal Society of Medicine to study the prevalence, effects, alleviation, and prevention of VD.\textsuperscript{135} Mrs. Sybil Gotto, who had been the main force behind the founding of the EES as an offshoot of the Moral Education League in 1907, worked with the EES Council in 1913 to pressure for the establishment of a Royal Commission on Venereal Diseases. Society members Mott, Scharlieb, and Lane served as Commissioners, while several other medical members provided expert testimony including opinions on the hereditary and congenital effects of syphilis.\textsuperscript{136} The Commission published the final report of its findings in 1916, following which Mrs. Gotto formed the National Council for Combatting Venereal Disease (NCCVD) as a body that would continue to lobby the government for compulsory treatment and

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\textsuperscript{135}At the October 1909 meetings on VD papers were read by Dr. Harriet Alexander and Ernest Lane, with Lady Emily Lutyens and F. W. Mott serving as chairs. See EES, \textit{Second Annual Report} (1909-10), p. 20; and \textit{Fourth Annual Report} (1911-12), p. 22. The EES's representatives on the joint committee were the President Leonard Darwin, Dr. Mott, Dr. Hadley, Ernest Lane, Dr. Douglas White, and Colonel Melville.

notification of diseases. EES members who were active in the National Council included Gotto as honorary secretary, Leonard Darwin as treasurer, F. W. Mott, Caleb Saleeby, Mary Scharlieb, J. A. Thomson, and Douglas White.¹³⁷

Leonard Darwin, president of the EES at this time, published a note in the *Eugenics Review* defending the Society's participation in the NCCVD against criticisms that concerns about the spread of sexually transmitted disease had nothing to do with heredity or selective breeding.¹³⁸ Sounding much like the non-mainline eugenist Saleeby, Darwin argued that syphilis was essentially a eugenic issue because of its impact on the health of offspring and hence the future of the race via direct transmission of the spirochaete from the mother. This theory thus provided the medical-scientific basis for an alliance between the anti-VD and eugenics campaigns. But other considerations may have further cemented the connection between these two reform movements. For instance, both shared origins in the Victorian "social purity" movement, which had championed moral education and especially the regulation of male sexual behaviour. Early-twentieth-century proponents of moral and sexual reform may have hoped to achieve these same goals through the NCCVD and EES, in the name of preventing social diseases and racial decay.¹³⁹ Moreover, as Greta Jones has pointed


¹³⁹ Frank Mort makes a similar argument about the transformation of the Victorian social purity movement, with its fixation on reforming sexuality through criminal law, into a
out in a recent article on women in the British eugenics movement, both the eugenics and anti-VD campaigns were considered of great importance by women and feminists during this period. Issues such as procreation, sex education, and moral reform were generally considered to fall within the special domain of women as mothers, teachers, and social activists.\textsuperscript{140}

The fact that the Eugenics Society chose to participate in campaigns to control syphilis and female inebriety indicates that its programme was indeed broad enough to include attention to factors that might influence the health of future generations by means other than hereditary transmission. As the examples of VD and alcohol show, official eugenic doctrine included the idea that external agents could in some cases produce congenital disease. But even further from the received view of the legitimate scope of eugenics was the work of those eugenic propagandists who focused their efforts on improving various aspects of post-natal nurture. For instance, it has already been seen that Saleeby and Scharlieb addressed the problem of inadequate care of children by alcoholic parents, as part of their agenda for nurtural eugenics. Saleeby and a few other eugenists likewise admonished their colleagues not to become too preoccupied with policies for controlling heredity and selection, since a sound environment and upbringing were equally crucial to ensuring the fitness of the next eugenic discourse on sex education. Frank Mort, \textit{Dangerous Sexualities: Medico-Moral Politics in England since 1830} (London: Routledge, 1987), pp. 153-210.

\textsuperscript{140}Feminists in the EES such as Mary Scharlieb and Elizabeth Sloan Chesser also sought to end the double standard in VD treatment and regulation: most legislation had been directed at female prostitutes rather than at the husbands and fathers who were equally likely to transmit such deadly diseases to their families. Jones, \textit{"Women and Eugenics in Britain,"} pp. 492-93.
generation of the race:

The eugenist, while intent on elucidating and promulgating the omnipotence of selection, may sometimes forget that, given a deficient pre-natal and post-natal "nurture," such as underfeeding, underbreathing, poisoning, overstraining and an unsuitable education, the next generation cannot be saved by even the best of ascendants.  

Clearly then some members of the Eugenics Society believed that their efforts towards ensuring the future of the race ought not end with simply "bringing the right gametes together," as Saleeby put it. One final example of eugenic interest in post-natal nurture can be given here: the fact that the EES served as a forum for discussion of the single most pressing public health issue of the Edwardian era, the problem of appallingly high rates of infant mortality. Several articles on this topic appeared in early issues of the Eugenics Review, while in 1910 a discussion of the causes of this crisis was held over the course of several Society meetings, eventually leading to the appointment of a special research committee to study the current state of medical opinion on the relative importance of biology

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142 Between 1850 and 1900, the general death rate in England had fallen from 22.2 per thousand living to 18.2 per thousand; meanwhile though the number of infant deaths had remained nearly constant at around 153 per thousand births. This meant that over 100,000 infants under one year of age died annually, with 20,000 of these fatalities occurring in London alone. Some notorious lower-class districts registered a "massacre of the innocents" of over 200 per thousand births. For the period 1901-1910 the infant death rate in England had dipped slightly to 128 per thousand, by 1940 the largest improvement had occurred to bring it down to 53, and for comparison the rate in the early 1980s was under 16. See Anthony Wohl, Endangered Lives: Public Health in Victorian Britain (London: Dent, 1983), p. 11; and George Newman, The Building of a Nation's Health (London: Macmillan, 1939), pp. 312-13.
and environment in the wastage of child life.¹⁴³

Given that reducing the infant mortality rate was invariably assumed to be a matter of public health administration, as well as a means of improving the quantity rather than the quality of the population, how did eugenists rationalize their interest in this particular issue?¹⁴⁴ Some no doubt took the position that premature deaths ought to be recognized as a eugenic issue because most were due to hereditary defects rather than bad environment. A high infant mortality rate would then be interpreted as a beneficial evolutionary force, as the weakest newborns were weeded out of the population. However, this better-dead argument was challenged by some Society members, such as the medical statistician Major Greenwood who outlined another possible relationship between infant mortality and racial fitness. Fully admitting that the administrative control of child welfare did not belong to the realm of eugenics proper, Greenwood nevertheless argued that in order to improve racial health eugenics would have to devote attention not only to innate characters but also to environmental factors such as poverty and artificial feeding that often led to infant deaths.¹⁴⁵

¹⁴³See the Letters, Editorial Notes, and Discussion sections of the *Eugenics Review* 2 (1910-11): 76-78, 255, and 321; and the EES, *Third Annual Report* (1910-11), p. 18. The research committee was formed after a Society member named Helen Blagg had read a paper questioning the importance of the hereditary factor in causing infant deaths. The committee consisted of Blagg, F. W. Mott, the geneticist R. C. Punnett, a Miss Fitzgerald, and a Dr. Barnes. They sent out questionnaires to medical personnel and held meetings over the course of the next two years, but nothing was ever reported on their findings.

¹⁴⁴The earliest public health remedies included home health visits for all newborns through the 1905 Notification of Births Act, and the introduction of municipal milk depots and infant welfare centres where mothers could bring babies for medical inspection and advice on feeding.

The assumption was that an excessive mortality rate caused by poor environmental conditions might go hand in hand with a high rate of unfitness among the survivors. If infant fatalities and physical deterioration were due to the same causes, then eugenists ought to support the work of the infant welfare movement as yet another means of race betterment.

In the sections to follow, further evidence will be provided showing that many members of the EES devoted a great deal of attention to problems such as alcohol abuse, infant mortality, and education in good parenthood, all of which seemed to fall outside the domain of eugenics strictly defined as a programme for encouraging selective breeding. My goal is to demonstrate that the scientific knowledge and social policies championed under the banner of eugenics were not as monolithic as suggested for instance by this statement of the received view:

"The whole eugenics movement was wedded to the conviction that heredity far outweighed environment in determining human character and human skills. Convinced that this belief had a sound scientific basis eugenists actively sought to reconstruct Britain’s social legislation on that basis."146

Contrary to this view, I contend that a significant number of eugenists in Britain broke with mainline doctrine on the relative importance of nature versus nurture. They embraced alternative theories of heredity and hereditary degeneration, while their policies for promoting race betterment were not limited to controlling human reproduction but also

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included the protection of parents and offspring from conditions of life that might lower the vitality of the next generation of the race. Discourses on the effects of parental alcoholism on offspring fit this description of non-mainline eugenics particularly well.

3. Who Were the Eugenists?

Alternative views held during the early years of the century regarding the range of policies and social reforms to be included under the rubric of eugenics have not until now been taken very seriously by historians of the British movement. For example, Geoffrey Searle too readily dismisses the eugenists’ interest in the problem of infant mortality as due to nothing but “genuine confusion” about what eugenics was all about. As Searle declares, “the idea died hard that eugenics covered any measure that might improve the health and happiness of babies.” He continues on in this cynical vein, accusing other EES members of having “deliberating posed as eugenists in order to attract attention to some other cause they wished to promote, temperance, sex education, control of venereal disease, the establishment of milk depots.” Searle may indeed have a valid point to make here: perhaps constituents of other reform movements discerned some advantage to be gained by associating themselves with the fairly prestigious science of eugenics. However, his insistence that some

\[14^7\] Searle, *Eugenics and Politics in Britain*, p. 15. Martin Pernick also criticizes fellow historians of the American movement for having “dismissed these concerns with environmentally-caused conditions as not really eugenic, but the result of mass culture’s misunderstanding of heredity, or of the colonization of eugenics by unscientific moral concerns.” Pernick, *Black Stork*, p. 50.

\[14^8\] Leonard Darwin, long-time EES president, lamented this very problem: he feared that his organization was “being used as a dumping-ground for cranks” who could not get a
reformers merely "posed as eugenists" overlooks real affinities that existed between the eugenics movement and among others the temperance and infant welfare crusades.

This same weakness plagues Dorothy Porter's argument about the "open antagonism" that purportedly characterized the relationship between eugenists and public health doctors in England. In her body of work on the professionalization of the public health service, Porter aims to correct a perceived imbalance in the historical literature. She observes that the central role played by early-twentieth-century preventive medicine in health policy making and administration has to this point received a paucity of attention compared to the far less influential eugenics movement. She further suggests that the eugenic philosophy failed to make much of a legislative impact in Britain owing mainly to outspoken opposition from a unified, well-established public health service. Unfortunately though, this thesis seems to be erected mainly on Porter's expectation that medical officers of health (MOH) should have resented hereditarian eugenics because it denigrated the value of their own professional work.

In response to the implications made by some eugenists that medicine could only hinder evolutionary progress, MOH were supposed to have resisted incorporating hereditarian or hearing in any other social reform society. Other more legitimate reformers—he gave the example of those interested in sex education—might join the EES honestly thinking that their causes could have some advantage to posterity, but then "once the eugenic blessing has been received, all thoughts of hereditary influences are likely to disappear" from their minds. Darwin, "Presidential Address, 12 June 1913," pp. 5-6.


Ibid., p. 160.
social Darwinist ideas into their public health policies. But while Porter is indeed able to cite a handful of physicians who expressed such animosity towards eugenics, she provides little evidence that this sort of antagonism was either widespread or significant. Moreover, she glosses over her own observation that certain public health doctors actually “attempted to synthesize environmentalist and eugenic themes in their views on health.” Like Searle she accuses these writers of merely “co-opting the language of degeneration” and does not consider what advantages they might have thought could be gained by formulating public health measures in eugenic terms.

Doctors in the British Eugenics Movement

Many individual exceptions to Porter’s generalization about a sharp division between eugenics and preventive medicine can easily be identified. Ironically, she even mentions one of them herself, the MOH for Liverpool Edward W. Hope. Addressing his professional colleagues in Public Health, the journal of the Society of Medical Officers of Health, Hope castigated eugenists for their talk about “the mischief which is wrought by the indiscriminate sanitarian who preserves the lives of the weakly and the degenerate.” Yet even though he spoke out against hereditarianism and social Darwinism, Hope nonetheless exhibited a strong


enough interest in the cause of race betterment to enroll in the Eugenics Education Society for a considerable period of time. He was a founding member of its Liverpool branch in 1910, and his name was still listed on the rolls in the EES’s 1919-20 Annual Report.

Several other representatives of the public health service likewise belonged to the EES. Archibald Kerr Chalmers, MOH for Glasgow, became chair of the newly founded Glasgow branch of the EES in 1910, and as late as 1917 published a paper in the *Eugenics Review* arguing that environment was more influential than heredity in weakening the vitality of the working classes.154 In 1905 he initiated a public health poster campaign designed to help combat maternal drinking as a cause of physical deterioration in children. Chalmers’s eugenic concerns were further evident in his testimony to the 1904 Physical Deterioration Committee and his participation in the National Birth-rate Commission. Similarly John Robertson, MOH for Birmingham, was listed in 1913 as a Committee member of the EES’s Birmingham branch and was still subscribing to the *Eugenics Review* in 1919.155 Both of these men were also on the organizing committees of the three major Infant Mortality Conferences. Leslie Mackenzie, medical inspector to the Edinburgh Local Government Board and campaigner for the physical training of schoolchildren, joined Dr. Chalmers in the Glasgow EES. Ettie Sayer was assistant medical officer to the London County Council Education Department and consulting physician to the National Association for the Care and


155 The EES *Sixth Annual Report* (1913-14) included the names of members of all the provincial branches, while the *Twelfth Annual Report* (1919-20) listed the subscribers to its journal along with the usual list of members and associates.
Control of the Feeble-minded. She brought her special interest in the problem of mentally deficient children to the Eugenics Society in 1908, as she participated in meetings, gave several public lectures, and served on the Council until 1913.

These particular eugenists clearly saw no contradiction between the work of the eugenics movement and their own work in preventive medicine. In fact physicians constituted the largest single occupational group on the Eugenics Society’s annual registers. In 1910-11, for instance, there were 43 doctors and surgeons enrolled among 530 total members. A disproportionate number of these served in leadership positions: of 111 members of the Society’s Council between 1908 and 1920, 18 were biological and social scientists while the largest group of 26 were medical practitioners. Likewise out of 40 members of the Council for 1914, 11 were university teachers and researchers and 9 were doctors. These figures suggest that many of the medical men and women who became affiliated with the Society were prominent members of their profession, and that they were extraordinarily motivated to take an active role in Society affairs.

It must be admitted however that the numbers cited above represent only a small proportion of the nation’s medical practitioners, a fact which has led historians such as Porter and Searle to conclude that the medical profession as a whole was indifferent or even hostile to eugenics. Presumably so few physicians sympathized with the eugenics cause because it had nothing to offer them. Searle for instance contends that the self-interests of only a very narrow range of “modern” scientific and medical professionals could have been served by

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156 These two surveys of the membership were made by Farrall, Origins and Growth of the English Eugenics Society, p. 221; and MacKenzie, “Eugenics in Britain,” p. 504.
hereditarian eugenics. He recognizes geneticists, specialists in hereditary diseases, statisticians, and demographers as the only groups who could have exploited the resources of the Eugenics Society in order to gain publicity and support for their research. At the same time he assumes that the careers of medical officers of health and other practitioners of curative and preventive medicine could only be jeopardized by the growing popularity of eugenics.

Searle and Porter both present a somewhat distorted picture of the relationship between eugenics and public health because they limit their analyses to a small number of doctors who publicly objected to some of the more inflammatory statements made by mainline eugenists about the dysgenic consequences of preventive medicine. These historians overlook those few influential MOH and other prominent medical practitioners who instead aspired to reconcile the hereditarian and environmentalist approaches to ensuring racial health. Some of these doctors actually joined the EES, where they tried to integrate measures for improving certain types of environmental conditions into the policies of the eugenics movement. They asserted that anti-alcohol and other public health measures could both safeguard the health of the community and ensure a sufficient supply of fit germ plasm for the perpetuation of a strong British race. Thus contrary to what Searle and Porter might have us believe, all physicians and medical officers of health obviously did not perceive eugenics to be

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157 Searle, “Eugenics and Class,” pp. 221-22. Searle was responding to Donald MacKenzie’s earlier assertion that the ideology of hereditarism served to legitimize medical-scientific expertise in general. According to the mainline class-based style of eugenics, members of the educated middle classes constituted a hereditary meritocracy who possessed intellectual abilities that made them uniquely qualified to serve as scientific experts. MacKenzie, “Eugenics in Britain,” pp. 511-12.
antithetical to their professional self-interests.

I would therefore suggest that in Britain, as in other national contexts, doctors who practiced certain specialties may have regarded their involvement in the eugenics movement as an opportunity to augment their social status and domains of expertise. For example, doctors working in the public health service argued that they could help prevent degenerate stocks from being created in the first place, through their efforts to limit exposure to diseases and toxins that might injure the fetus or the hereditary material. Obstetricians and gynaecologists similarly possessed special skills and expertise that could be applied to prenatal, preventive eugenics. It was hoped that politicians and policy makers would turn to these medical authorities when it came to the vital imperial issue of managing the quantity and quality of the population. Not just biologists and biometricians but medical professionals too offered their services as the legitimate defenders of national and racial health.¹⁵⁸

My focus in this project will be on this largely overlooked medical contingent of the British eugenics movement. As I shall illustrate next, many of these medical eugenists held memberships in both hereditarian and environmentalist reform programmes. Mazumdar has similarly detailed many of the "multilateral connections" which linked the Eugenics Society to related groups such as the Charity Organisation Society, Moral Education League, and Fabian Society. She shows that numerous reformers from the "highly educated professional middle class" each belonged to two or more of the societies within this larger network, all of

¹⁵⁸Even Searle acknowledges that a few of the more elite members of the medical profession aspired to a greater social role as eugenic experts. Searle, "Eugenics and Class," pp. 226-27. I will return to this theme at greater length in Chapter IV.
which addressed the broad social problem of what to do about the degenerate urban underclass. One conclusion that could be drawn from Mazumdar’s work is that many reformers who joined the EES understood eugenics to be simply another approach to solving this great social ill—they likely had no special interest in specifically eugenic issues such as theories of heredity or means of improving the human breeding stock. The current study borrows from Mazumdar’s insights but centres more narrowly on one particular subset of her overlapping “middle-class meliorists,” namely those medical personnel who generated discourses about alcoholism as a public and racial health issue. This pool of medical practitioners and writers contributed to the memberships of several organizations that addressed the problem of the deleterious effects of parental alcoholism on offspring, including the Eugenics Society, the Society for the Study of Inebriety, and the Infant Mortality Conferences.

But these converging memberships tell only part of the story of the deep similarities that existed between hereditarian and public health approaches to social reform in Edwardian Britain. For I would argue further that doctors did not actually have to belong to the EES in order for them to share its concerns about ensuring the health of posterity. Eugenic anxieties and rhetoric about “the future of the race” can be discerned for example in the writings of

159 Mazumdar, Eugenics, Human Genetics and Human Failings, pp. 21-22.

160 Within her complex network of middle-class reformers, Mazumdar also includes groups that addressed public health issues, such as the Social Science Association, the Society for the Study of Inebriety, and the National Council for Combatting Venereal Disease. However, with her emphasis on the shared problematic of the “residuum” class Mazumdar casts a considerably wider net than I do in this study of medical and eugenic approaches to the alcohol problem.
infant welfare and temperance reformers after 1900, as well as in those of many Inebriety Society members. All of these campaigns and organizations incorporated into their programmes some degree of attention to improving the biological quality of both present and future generations of the population. Most of their supporters, including many of the individuals who will be discussed here, did not identify themselves as eugenists. Yet their ideas might still justifiably be labelled eugenics, in accordance with the precedent set by studies of the medically dominated eugenics movements in for example Canada and South Africa.

In the Canadian setting, eugenic plans for race betterment found wide support within medical circles during the 1910s and 20s, yet a national Eugenics Society was not formed until 1930. Eugenics thus flourished outside of any organization expressly devoted to the cause. Moreover, one of the most outspoken of the Canadian eugenicists during this early period was the public health doctor Helen MacMurchy, who had first given “hereditarian concerns a central place on the agenda of the public health movement.” Her work emphasized both the hereditary origins of feeblemindedness and the environmental causes of infant mortality.161 Likewise a recent thesis on eugenics in South Africa has focused upon discourses about racial fitness printed in that nation’s major medical journal between 1900 and 1930. In South Africa there was never any organized eugenics society at all; instead the movement was promoted by a diverse group of medical doctors who were united by a collective desire to “improve the race.” South African eugenists favoured programmes

161Angus McLaren, Our Own Master Race: Eugenics in Canada, 1885-1945 (Toronto: McClelland and Stewart, 1990), pp. 28-45, especially p. 44.
reminiscent of British preventive eugenics: they endeavoured to save babies and improve the white lower classes by means of such public health measures as sanitary engineering, clean milk and food, and the teaching of hygiene and "mothercraft."\textsuperscript{162}

In the historical literature these South African and Canadian doctors have conventionally been labelled "medical eugenists," despite their preferences for environmentalist reforms over hereditarianism and regardless of the fact that they did not belong to any organizations specifically created to further the cause of race betterment. In that case we should be equally comfortable acknowledging that in Britain as well eugenic policies broadly defined were sometimes advocated even outside of the propagandist society and research laboratory for eugenics that were established during the first decade of the century. In the next section I shall focus on one particular organization that addressed eugenic issues and shared considerable membership overlaps with the Eugenics Education Society. This was the medical association called the Society for the Study of Inebriety (SSI), which after 1900 became the main forum in Britain for eugenic discussions of the effects of alcoholism upon offspring and the race.

\textit{Eugenists in the Society for the Study of Inebriety}

The SSI had been founded in 1884 for the purposes of promoting the scientific study of alcohol problems and the medical treatment of alcoholism. Its entirely medical membership

\textsuperscript{162}Susanne Klausen, "'For the Sake of the Race': Eugenic Discourses in the \textit{South African Medical Record}, 1903-1926 and the \textit{Journal of the Medical Association of South Africa}, 1927-1931" (M.A. diss., Queen's University, 1994), pp. 5 and 29.
included not only psychiatrists who specialized in addictions but also temperance advocates, public health doctors, and eugenists. The presence of such a wide variety of medical and reform interests within the SSI ensured that the papers read at its meetings and published in its Proceedings and later the British Journal of Inebriety ranged broadly over all of these domains. Thus SSI members regularly reviewed and debated the most recent research into the effects of alcohol consumption on drinkers, on their children, and on the race. From the start, however, the work of the Society had been heavily prejudiced by teetotal principles, as many of its members also belonged to temperance organizations such as the scientifically oriented National Temperance League and its sister society the British Medical Temperance Association. After the turn of the century, the leadership of the SSI began trying to steer the Society away from previous associations with the largely unsuccessful teetotal and prohibitionist approaches to social reform. These physicians and medical scientists now declared that their scientific and "objective" approach to the alcohol problem was superior to the efforts so far made by the lay temperance movement. Thus for example Dr. Theophilus

163 The only full-length study of the SSI is by Virginia Berridge, "The Society for the Study of Addiction: 1884-1988," British Journal of Addiction 85 (1990): 983-1087. The Society for the Study of Addiction is the current name of this organization, which still publishes research in its journal now called Addiction. The Society was first established in 1876 as the Society for Promoting Legislation for the Control and Cure of Habitual Drunkards; after the passage of the first Habitual Drunkards Act in 1878, the organization re-emerged in 1884 as the Society for the Study and Cure of Inebriety, dropping the overly-optimistic "cure" from its title in 1887.

N. Kelynack, long-time secretary to the SSI and editor of its *Journal*, criticized the anti-alcohol crusade for its failure to make use of science as the foundation for sound social reform policies:

Much if not all of our legislative efforts have been little better than blind experiments, temporary expedients and compromises with selfish individual or vested interests. Throughout there has been a conspicuous lack of any clear recognition of scientific principles which might guide thought and govern action.¹⁶⁵

Kelynack and his contemporaries tried to encourage further investigation of the drink question by qualified medical researchers and clinicians, who would then be recognized as authorities in this field. But in practice their promise to undertake research before formulating any further public policy on alcohol turned out to be an empty one. Very little alcohol research was actually conducted on English soil during the nineteenth and early twentieth centuries, despite the fact that members of the temperance, inebriety, and eugenics movements frequently invoked the authority of science. With a few notable exceptions, most of the physiological and pathological studies cited in the temperance and eugenics literature had been carried out by European and American workers. Even the SSI itself did not have funds available to sponsor any research projects until the 1940s.¹⁶⁶ Moreover, Kelynack and


¹⁶⁶Ironically, the research initiative only got off the ground in the 1940s when the Society grudgingly accepted funding from a group of brewers (the main sponsor seems to have been the Guinness company). The researchers who were hired, Professor F. L. Golla and his assistant Leslie McLeod, undertook a study which involved administering alcohol to experimental animals to investigate biochemical changes. Beridge, “Society for the Study of Addiction,” pp. 1040-42.
most other SSI leaders who criticized the methods of the temperance movement continued to
be active in anti-alcohol organizations and to support the movement's supposedly
"unscientific" drink control policies, such as licensing reform and moral suasion.

As Virginia Berridge has noted, this failed research initiative was not the sole
manifestation of the Society's new "professional paradigm." Preventive approaches to
alcohol- and drug-related problems, championed under the rubric of infant welfare and
"social hygiene," also characterized the work of the SSI after the turn of the century. By this
time measures to control drink distribution and consumption had come to be subsumed under
an interventionist public health paradigm.\textsuperscript{167} The SSI thus lobbied for public health reforms
aimed at educating the general public about the medical risks of alcohol use to individuals
and their progeny. Another related theme that frequently appeared in the Society's
publications was the relationship between alcoholism, hereditary degeneracy, and the crisis of
national deterioration. This is the area in which the SSI exhibited strongest affinities with the
Eugenics Society.

A few examples will serve to demonstrate that the eugenic aspect of the national drink
problem held an important position in the work of the Inebriety Society during the 1900s and
1910s.\textsuperscript{168} Scientific investigation into the phenomena of hereditary alcoholic degeneration

\textsuperscript{167}\textit{Ibid.}, p. 1005. Public health interest in alcohol problems is also the topic of Gutzke,
"Cry of the Children."

\textsuperscript{168}Notices that appeared in the \textit{British Journal of Inebriety} expressed the SSI's sense of
fellowship with the young Eugenics Education Society. Several issues of the \textit{Journal} even
included full-page advertisements for the \textit{Eugenics Review} and notices of particular articles.
See for example \textit{British Journal of Inebriety} 7 (1909): 48-49; 7 (1910): 225-26; and 8 (1910):
52.
and the transmission of the alcoholic habit first occupied centre stage on the SSI agenda in 1899, when a special Committee on Heredity was appointed to evaluate the current state of knowledge on these topics. The Committee submitted its report in 1901, having reached no unanimous conclusions about how alcoholism could affect offspring.\textsuperscript{169} Then in 1903, the Society focused its attention on eugenics and infant mortality with an entire meeting devoted to the theme of female inebriety. William Charles Sullivan, author of the oft-cited study of incarcerated female drunkards, read a short paper on female alcoholism and racial degeneration. He argued that chronic inebriates had a “tendency to procreate offspring that are likely to be parasitic or dangerous to the community,” and that their long-term confinement was therefore justified on eugenic grounds.\textsuperscript{170} In other papers, the London coroner W. Wynn Westcott related his experiences with overlaying by drunken mothers, while Miss Frances Zanetti thought that infant deaths and the growth of a “parasitic class” were due mainly to the neglect of basic domestic duties by intemperate women. Another typical discussion of the racial effects of maternal alcoholism can be found in a later SSI paper by the social activist Violet Kelynack, wife of the Society's secretary. According to Mrs. Kelynack's analysis, women were responsible for most mortality and morbidity in the

\textsuperscript{169}Report of the Committee on Heredity,” \textit{Proceedings of the Society for the Study of Inebriety} 68 (1901): 1-12. I shall discuss the findings of this committee at greater length in the next chapter.

next generation owing to their disregard for home hygiene, their unwillingness or inability to nurse, and their drinking during pregnancy which might result in an infant "born with badly-nourished tissues, with unstable brain and nervous system, and limited in its powers of normal development."171

In his first SSI presidential address in 1910, the temperance doctor Theodore B. Hyslop likewise emphasized the key role to be played by his organization in furthering the cause of race betterment. Hyslop stated that as a source of hereditary defects and degeneration, alcohol should be recognized as a problem for "the survival of the race." It thus fell to the eugenically-minded SSI to take measures which would help "prove to the community that each individual in it has responsibilities which are far wider reaching than the immediate self or present." In addition to the need to warn future parents about the racial effects of alcoholism, Hyslop also mentioned as a eugenic measure marriage restrictions on individuals with dangerous drinking habits: "it may be that we shall yet see the day when not only are there legal restrictions to the marriage of the biologically unfit, but also to the marriage of those addicted to alcohol."172

Numerous other medical practitioners and authors shared Hyslop's dual interests in eugenics and alcoholism, and the names of at least 20 of these can be found on the rolls of both the EES and the SSI. Several have already been mentioned in the preceding sections. The prison doctor W. C. Sullivan served as a member of the SSI's governing Council from


1899 to 1926, and was also a founding member of the EES and listed on its rolls until 1914. T. N. Kelynack, who for four decades represented the heart and soul of the SSI as its secretary and editor, also saw fit to join the EES briefly between 1909 and 1913. He no doubt presumed that the EES's propagandizing efforts were congruent with his other interests in public health and the health of children. Kelynack served as editor of the *British Journal of Tuberculosis* and the periodical *The Child*, as Secretary of the Royal Institute of Public Health, and as a participant in the infant mortality conferences and the temperance movement. In fact his career as a medical journalist, which included the publication of books on tuberculosis, alcoholism, and “defective children,” epitomized the wide range of subjects that were often assumed to be relevant to racial fitness and national efficiency.\(^{173}\)

Another important character in my story who was a long-time member of both the SSI and the EES was the alienist and temperance advocate Dr. Robert Jones (later Sir Robert Armstrong-Jones). Jones joined the EES in its second year, read a paper on “mental integrity,” and was soon elected to the executive. He also served on the SSI Council for a decade and contributed several articles on the connections between inebriety, mental disease, and national deterioration. He and the temperance surgeon William McAdam Eccles officially represented the views of the Inebriety Society before the 1904 Inter-departmental

\(^{173}\)Berridge, “Society for the Study of Addiction,” p. 1037. Much of the biographical information about the SSI characters mentioned here has been provided by Berridge. Biographical entries for those who were known as supporters of the temperance cause can also be found in Cherrington’s *Standard Encyclopedia of the Alcohol Problem*. 
Committee on Physical Deterioration. Jones testified to that Committee regarding his extensive experience with alcohol as a cause of insanity in many of his asylum patients. He was also one of the most outspoken defenders of soft heredity and the racial poison theory in Britain. His colleague Eccles was not a member of the EES, but he also wrote on the "vexed question of heredity" with respect to alcohol and race deterioration, concluding in favour of both inherited nervous instability in alcoholics and intra-uterine poisoning.

In contrast to Eccles's and Jones's rather vague references to "malnourished fetuses" and "devitalized" infants, a more precise theory of hereditary alcoholism was outlined by the neurologist and eugenist Frederick W. Mott. Mott maintained that in his wide experience as director of the London County Council Pathological Laboratory at Claybury Asylum, he had found little evidence of lesions in the brains of patients diagnosed with alcoholic insanity, suggesting that their mental imbalance was not in fact due to their chronic drinking.

It has been my constant endeavour, since I was appointed to the post of pathologist, to find cases of alcoholic dementia in the post-mortem room in order that I might determine the structural changes to the brain which might account for the permanent dementia, and I have been greatly surprised at the very few cases I have obtained.

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174 The extensive testimony of Eccles and Jones appears in the Physical Deterioration Report, vol. 2, pp. 538-50. Eccles and Jones also submitted an appendix to the Report (vol. 3, pp. 722-29), which consisted of statements made by members of a special SSI committee on the topic of the relationship between alcohol and deterioration. Eccles was very active on the temperance platform and on the executives of the National Temperance League, British Medical Temperance Association, and Band of Hope Union.


Mott felt certain that most of the cases of alcoholism, insanity, and epilepsy that he saw post-mortem owed their condition not to alcohol itself but instead to an inherited neuropathic tendency. It was this kind of true biological transmission, rather than any poisoning action of alcohol upon germ cells, that accounted for family histories of mental disease and other anti-social behaviours. As Mott explained, the weight of this evidence had forced him by 1910 to abandon his previous assumption that the intemperate habits of ancestors caused these degeneracies. For many years he had been an influential member of both the Inebriety and Eugenics Societies, serving as an SSI vice-president and an EES Council member from 1910 onwards. He also participated in the infant mortality conferences and the government investigations into physical deterioration, feeblemindedness, and venereal disease.

Another eugenist who held similar “heterodox opinions” about the hereditary effects of alcoholism was George Archdall Reid. Reid had received medical training but apparently never practiced medicine, instead pursuing careers as a schoolmaster, stockman, science writer, and editor. He was active on the SSI Council between 1899 at 1910, at which point he quit the Inebriety Society altogether after a prolonged dispute over what he called “the temperance fallacy,” or the belief that the acquired alcoholic habit could be transmitted to offspring in some Lamarckian fashion. Afterwards he became associated with the EES and served on its Council for many years. In fact it had been in response to Reid’s attacks on temperance science and the Lamarckian theory that the SSI Committee on Heredity was

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177 Mott’s earlier use of pedigrees to demonstrate the hereditary effects of such acquired diseases as alcoholism and tuberculosis can be seen for example in his paper “A Discussion on the Relationship of Heredity to Disease,” *British Medical Journal*, 28 Oct. 1905, pp. 1086-91.
originally struck. He further agitated the temperance doctors by proposing a controversial theory which said that alcohol did not cause degeneracy but instead acted as a beneficial selective agent.\textsuperscript{178}

Several other medical practitioners who enrolled in both the Eugenics and Inebriety Societies should be mentioned here briefly. The psychiatrist Sir James Crichton-Browne served briefly as the first president of the EES and before that was a vice-president of the SSI. He was also known for his leadership in the public health campaigns against tuberculosis and venereal disease. The surgeon C. J. Bond was a long-time member of the EES and president of the SSI in 1922-24. Likewise Surgeon-General G. J. H. Evatt was listed on the rolls of the EES for many years and held elected positions in the SSI continuously from 1884 to 1921. Professor James A. Lindsay was an SSI vice-president, temperance advocate, and chair of the Belfast EES. Dr. Nathan Raw belonged to the Liverpool branch of the EES, where in 1913 he gave an address on “The Influence of Environment on the Individual.” The doctors E. W. Hope, Leslie MacKenzie, Reginald Langdon-Down, E. Vipont Brown, William A. Potts, Robert Murray Leslie, and Mary Sturge were similarly involved in both societies.\textsuperscript{179} Potts worked as a medical investigator for the Royal Commission on the Care and Control of the Feeble-minded and delivered three papers before the SSI on the topic of the relations between heredity, alcoholism, and feeblemindedness. His views on pre-natal alcoholic pathologies


\textsuperscript{179}A few even more prominent names were also crossovers, including William Osler, H. G. Wells, and the philanthropist Lady Henry Somerset.
closely corresponded to Saleeby’s preventive eugenics. The Scottish physician Leslie was chairman of the Women’s Imperial Health Association and backed the temperance cause owing to his hospital experience with the ravages of alcohol. He lectured on eugenics for the EES and contributed notable articles on women, alcohol, and eugenics to the *Journal of Inebriety* and *Eugenics Review.* Mary Sturge was best known as Sir Victor Horsley’s collaborator on numerous publications pertaining to the drink question, including their joint attacks on Karl Pearson’s alcohol research in 1910-11.

Finally, a handful of doctors who specialized in obstetrics and diseases of women made crucial contributions to eugenic discourses on alcoholism—particularly female alcoholism. One of these was J. W. Ballantyne, who acted as an SSI vice-president during the 1910s and 20s, and in 1913 participated in a committee that tried to establish an Edinburgh branch of the EES. His pioneering programme for the “hygiene of the expectant mother” had a strong influence on Saleeby’s ideas about pre-natal and nurtural eugenics. In 1901 Ballantyne had opened the first pre-maternity ward in Great Britain at the Edinburgh Maternity Hospital.

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182 Leslie also fit this profile, although his writings on women and alcohol were not nearly as extensive as those of Ballantyne, Scharlieb, or Saleeby. Another character who could almost be included in this group of eugenic specialists in diseases of women was Dr. Elizabeth Sloan Chesser, who practiced and wrote textbooks in the area of women’s and children’s health. Chesser joined the EES but not the SSI, although she did contribute a paper on “Inebriety among Women,” *British Journal of Inebriety* 6 (1909): 186-89.
modelled on Adolphe Pinard’s system of pre- and post-natal maternity care in France. The purpose of this special ward was to provide sufficient rest and nutrition for expectant mothers, thereby protecting them from the devitalizing influences of everyday working-class life.\textsuperscript{183} One of the most deadly of these influences, in Ballantyne’s expert opinion, was alcohol. He therefore took a special interest in the problem of maternal alcoholism and intrauterine poisoning, and contributed papers on the eugenic aspects of the drink question to the infant mortality conferences and the Society for the Study of Inebriety.

As active members of the EES, SSI, and infant mortality conferences, Mary Scharlieb and Caleb Saleeby likewise addressed the problem of the direct and indirect effects of maternal drink habits upon racial health. Dame Mary Scharlieb was on the vanguard of the medical women’s movement in Britain: she was one of the first women to earn a medical degree and throughout her long career vigorously promoted educational and employment opportunities for female physicians.\textsuperscript{184} She had begun practicing in India and London as a gynaecological surgeon in the 1880s and kept up her full-time consulting practice well beyond age 80. Scharlieb held several positions on the SSI executive from 1903 onwards, including two terms as president in 1912-16. She was never listed among the members of the EES, even though her name appeared occasionally as a participant in Society events and she

\textsuperscript{183}Saleeby cited Ballantyne’s work approvingly as an example of preventive eugenics in action. He himself had worked at the pre-maternity ward briefly while he was a medical student in Edinburgh. Saleeby, “Imperial Eugenics,” pp. 489-90.

\textsuperscript{184}Scharlieb’s autobiography focuses mainly on her work on behalf of medical women in England and India, but says nothing about her contributions as a social activist in the SSI, the EES, or the NCCVD. Mary Scharlieb, \textit{Reminiscences} (London: Williams and Norgate, 1924).
was a prolific propagandist for the nurtural style of eugenics. In particular, she wrote textbooks on expectant motherhood and women's role in reproducing a healthy race, while also championing social hygiene efforts to reduce alcoholism and venereal diseases for the benefit of women and children. Her writings on eugenics and infant welfare emphasized the observation that from alcoholic, overworked, and impoverished mothers "it is impossible that a vigorous, healthy and intelligent race can be bred."

Caleb Saleeby studied under the renowned obstetrician Ballantyne and earned the Edinburgh MD in 1904. He briefly worked as resident physician at the Edinburgh Maternity Hospital and Royal Infirmary, but soon abandoned all thought of pursuing a medical practice in obstetrics in order to devote full time to writing and lecturing on behalf of the temperance and eugenics causes. Saleeby belonged to the executives of several national and international temperance and prohibitionist organizations. He joined the SSI in 1906 and was first elected to its Council in 1919. He contributed prolifically to the Journal of Inebriety and published several books on the alcohol problem, eugenics, and race motherhood. He also addressed these same topics at each of the infant mortality conferences. As an original Council member of the Eugenics Education Society he directed the campaign for reopening the London inebriate reformatories and gave numerous popular lectures at the Society's propagandist

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185In the EES Annual Reports she appears as a speaker at the first Galton Day celebration, as a chairperson of meetings devoted to women's issues, and as a lecturer on eugenics for a summer school as late as 1917-18. Hence I shall consider her to have been an active participant in Society affairs, even though she evidently never chose to become a paying member.

meetings. His 1909 *Parenthood and Race Culture* was the first full-length explication of the new eugenic creed.\(^{187}\)

By 1910, however, it appears that Saleeby had fallen out of favour with the rest of the leadership of the Eugenics Society. According to Searle, Saleeby's colleagues had "lost patience" with his unorthodox ideas and therefore they did not return him in the May 1910 Council elections.\(^{188}\) He had no doubt provoked them by complaining constantly about their excessively narrow definition of eugenics, which ignored the relevance of temperance reform and European research on alcoholic blastophthoria. He even denounced the better-dead style of eugenics in the course of promoting his own "preventive" alternative. After 1910 Saleeby grew increasingly bitter towards the organized eugenics movement, and it was at precisely this moment that his celebrated controversy with Karl Pearson over the effects of alcohol on offspring began. Yet he never relinquished his enthusiasm for the eugenics cause itself. As late as the 1920s he was still struggling to get a hearing for his ideas on racial poisons and preventive eugenics. These ideas may have been repudiated by the Eugenics Society and the

\(^{187}\)Saleeby not only invented the little-used terms "preventive" and "nurtural" eugenics for his own ideas about how to improve the race, but he also claimed to have coined "positive" and "negative" eugenics, as well as "eugenist." Searle, *Eugenics and Politics in Britain*, p. 19.

\(^{188}\)Searle uncovered two accounts of what happened at that meeting. Galton wrote to Pearson explaining that the Council had refused to put Saleeby's name on the candidates list, after the Secretary Mrs. Gotto had taken him aside to warn him that "certain members of the Council strongly objected to serving longer with him." Karl Pearson, *The Life, Letters and Labours of Sir Francis Galton* (Cambridge UP, 1930), vol. IIIA, p. 428. However, the minute book of Council for 5 May 1910 records that Saleeby's name did in fact go forward for election and that he was voted out. He later returned to an EES meeting in October 1913, offering to present a paper, but the Council voted he not be heard. Searle, *Eugenics and Politics in Britain*, pp. 122-23.
Eugenics Laboratory by 1910, but they nevertheless represented common assumptions made by temperance reformers, inebriety doctors, and authorities in the public health and infant welfare movements.

The membership crossovers outlined here should serve as sufficient demonstration that numerous inebriety doctors were specially interested in the eugenic issue of race betterment, while vice versa many eugenists devoted attention to such environmental problems as alcoholism, the racial poisons, and infant mortality. Theirs was the style of eugenics in Britain that I term non-mainline or Lamarckian and contrast with the hard hereditarian eugenics favoured by “purists” such as Karl Pearson, who disavowed any kind of soft heredity and downplayed the role of environment. Saleeby’s focus on the racial effects of alcoholism constituted the foremost example of non-mainline eugenics, since he explicitly included notions of soft heredity and environmentalist programmes such as temperance reform and infant welfare within the special departments of eugenics he labelled preventive and nurtural. In pointing out the existence of this non-mainline style of eugenics in Britain—which so closely resembled the environmentally oriented eugenics dominant in France and Brazil—I am not however claiming that public health, infant welfare, or temperance were universally considered to be branches of a larger eugenics programme. On the contrary, with a few notable exceptions such as Saleeby himself, most temperance doctors did not actually refer to anti-alcohol teaching as a “eugenic” measure, nor did they choose to join the EES. Yet I would contend that their concerns about alcohol as an “enemy of the race” can legitimately be identified as belonging to a eugenic discourse on alcoholism.
1. The Concept of Degeneration

Medical professionals and social reformers who addressed various aspects of the national drink problem had reached a virtual consensus on the subject of alcoholic heredity by the opening years of the twentieth century. It was generally agreed first of all that the alcoholic habit itself might be passed from parent to child through some kind of inherited predisposition. If this theory can be compared to current-day research initiatives seeking a "gene for alcoholism," then the second early-century version of alcoholic heredity more closely resembled the modern diagnosis of Fetal Alcohol Syndrome. For it was also widely believed that the drinking habits of parents and especially mothers could lead to a variety of hereditary or congenital defects in offspring, without the presence of any pre-existing hereditary taint. The resulting defects were not limited to inebriety itself. Instead clinical observations suggested that the surviving progeny of chronic inebriates were likely to be afflicted with symptoms ranging from reduced vitality and physical deformities to mental conditions such as epilepsy, insanity, and feeblemindedness. By this time little support remained for the idea of Lamarckian transmission of alcoholic pathologies or the craving for drink itself. In lieu of Lamarckism most writers explicaded theories which held that alcohol could cause pre-natal germinal or embryonic poisoning.

In the early 1900s only a few British authorities in the alcohol field disputed this racial poison interpretation of the transmissible effects of alcoholism. The most notable of these
critics were Archdall Reid, F. W. Mott, and especially Karl Pearson. In fact Pearson’s 1910 refutation of the racial poison theory finally compelled doctors, reformers, and non-mainline eugenists to articulate more explicitly their long-standing beliefs about the deleterious effects of parental drinking. These writers had to defend the scientific validity of these beliefs against charges that they amounted to nothing more than anti-alcohol “fanaticism.”

Pearson’s work challenged notions about alcoholic heredity that had been universally accepted for several decades, while his intrusion into the alcohol arena posed a threat to the reigning authorities. Thus in order to understand why the hard hereditary theory of alcoholism put forward by Pearson’s school of eugenists met with such vehement resistance in 1910, it will first be necessary to explore the earlier history of ideas about the hereditary and congenital effects of parental intemperance. The nineteenth-century antecedents of the racial poison theory can be found in various discourses on hereditary degeneration, as well as in research carried out in the name of “temperance science.”

This chapter will therefore attempt to survey the social, professional, and intellectual contexts in which a medical consensus on the relationship between drinking by ancestors and degeneracy in progeny was forged during the last decades of the nineteenth century. I identify three interrelated groups of precursors who laid the ground for Edwardian beliefs about the morbid effects of alcohol on offspring and the race: the temperance doctors, hereditary psychiatrists, and specialists in the study and treatment of alcoholism. These physicians were largely responsible for introducing the special problem of alcohol into Victorian discussions of the health of current and future generations. Their concerns about how excessive alcohol consumption might produce insanity, idiocy, or physical defects in the
descendants of drinkers were often incorporated into broader nineteenth-century discourses on the perceived medical and cultural crises of degeneration. Let us begin then with an overview of the history of concepts of hereditary physical, mental, and moral degeneration, before addressing the question of where alcohol fit into these theories of the progressive decay of families, nations, and races.

_Bénédict Augustin Morel and Psychiatric Dégénérescence_

The first theory of hereditary degeneration formulated in a medical context was that of the French alienist Bénédict Augustin Morel, published in 1857. Prior to Morel the concept of degeneration had been known mainly for its role in the anthropological theories of race put forward by such notable figures as the British psychiatrist J. C. Prichard and the German naturalist J. F. Blumenbach. By the end of the century, however, degeneration was more

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1B. A. Morel, _Traité des dégénérescences physiques, intellectuelles et morales de l'espèce humaine_ (Paris: J. B. Baillière, 1857). The most detailed English-language source on Morel is Ruth Friedlander, "Bénédict-Augustin Morel and the Development of the Theory of Dégénérescence (The Introduction of Anthropology into Psychiatry)" (Ph.D. diss., University of California, San Francisco, 1973). Other works that discuss Morel's ideas will be mentioned later. A number of additional monographs and theses by French scholars have addressed the use of Morel's concept of degeneration in psychiatric discourses. Most often cited is Georges Genil-Perrin, _Histoire des origines et de l'évolution de l'idée de dégénérescence en médecine mentale_ (Paris: Leclerc, 1913). This writer commended the nineteenth-century degenerationists for having taken the first steps towards liberating psychiatry from the grip of religion and metaphysics, making it for the first time a proper positivist science.

often utilized as an explanatory framework in the disciplines of psychiatry and criminal anthropology, especially in the work of Valentin Magnan and Cesare Lombroso. The language of degeneracy also surfaced in literary works of the second half of the century, most famously in Émile Zola’s *Rougon-Macquart* cycle of novels. Based on the contemporary scientific theories and psychiatric classifications introduced by Morel and Lombroso, Zola had documented the hereditary decline of a single fictional family over successive generations—a story intended to symbolize the decline of France as a whole during the Second Empire. After the turn of the century, degeneration as scientific theory and cultural metaphor reappeared in eugenic discourses throughout Europe, Britain, and America.

Most historians of degeneration have recognized that late-nineteenth-century notions of “atavism, regression, relapse, transgression and decline” ironically emerged “within a European context so often identified as the quintessential age of evolution, progress, optimism, reform or improvement.” Commentators on biological and cultural decay often

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⁵Pick, *Faces of Degeneration*, pp. 2 and 11. This book provides the single most comprehensive analysis of the scientific and political concerns of the major degeneration theorists, and I shall rely heavily on its summaries and insights in the following discussion. According to the title of another collection of historical essays on this topic, degeneration was perceived as “the dark side of progress.” J. E. Chamberlin and S. L. Gilman, eds., *Degeneration: The Dark Side of Progress* (New York: Columbia UP, 1985). Degeneration was likewise portrayed as the flip side of progress in the biological phenomena described by E. Ray Lankester. The Darwinian biologist Lankester proposed that parasites must have
suggested that social pathologies such as increasing rates of crime, alcoholism, and mental
disease might be by-products of the higher evolution of mankind or the progress of
civilization. Thus one typical explanation of degeneracy recognized those anti-social
individuals labelled "moral imbeciles" and "born criminals" as throwbacks to a more
primitive or even animal stage of evolution, who lacked man's recently acquired mental and
moral powers. Progress and decline were likewise held to be inseparably linked where "the
appearance of degenerative illnesses in society was the price paid by that society for
successful adaptation to a new urban and industrial environment." For instance the rapid
pace of change that characterized highly advanced civilizations, along with the intellectual
demands placed upon their citizens, were often implicated as causes of nervous exhaustion,
hysteria, and insanity. Likewise filth, bad air, and toxins found in urban centres were
assumed to be at the root of heritable physical, mental, and moral defects in the lower social
strata. And even episodes of political unrest and barbaric mob behaviour in various countries
were subsumed under the broad category of dégénérescence. Social instability was blamed
on industrialization, democracy, and social mobility—attributes of Western society ordinarily
interpreted as signs of progress. In short, then, the theory of degeneration provided

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6Robert Nye, "Degeneration and the Medical Model of Cultural Crisis," in S. Drescher, et
al., Political Symbolism in Modern Europe: Essays in Honor of George L. Mosse (New
nineteenth-century social activists with a means of reconciling the continued existence of poverty, unfitness, and immorality in their world with the prevailing image of their times as fundamentally progressive, confident, and prosperous.7

Degenerationism as a scientific hypothesis had first appeared in the eighteenth-century naturalist Georges Buffon's monumental *Histoire naturelle*, in which the term was used to refer to a theory of the origins of new animal varieties and species. In a section entitled "de la dégénération des animaux," Buffon made the radical suggestion that related species such as those of the cat family were descended or "degenerated" from a common ancestor—an original, ideal cat form. New forms arose owing to changes in the environment or migration of populations.8 Buffon's theory even tried to account for the formation of the various human races, an idea which was next adopted and expanded upon by early-nineteenth-century anthropologists and ethnologists of the monogenist school.

The name of Johann Friedrich Blumenbach is most often associated with the anthropological theory of degeneration. Based upon his studies in comparative anatomy, Blumenbach reconstructed the relationships between the five major races of man as a history of divergence or "degeneration" from a primal type. Not surprisingly he judged that the current-day European or "Caucasian" race (he invented the term) most closely corresponded

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7Concepts of degeneration could account for those "negative effects" of social evolution which "threatened to stall or even reverse the 'normal' condition of advance." Robert Nye, "Sociology and Degeneration: The Irony of Progress," in Chamberlin and Gilman, eds., *Degeneration: The Dark Side of Progress*, pp. 49 and 67.

to the starting point of human evolution, while the Mongolian and Ethiopian races had
departed furthest from the white standard after having migrated into more demanding
climates since the original Creation. It was assumed that all change was retrograde and that
the non-Caucasian races represented a fall from an ideal past condition of man in their
physique, features, mental ability, and moral character.

The anthropological doctrine of degenerate races had a direct influence on B. A.
Morel's medical theorizing about the causes of mental pathology. Morel was an admirer of
the great French naturalist Buffon, having been interested from the start of his career in the
study of the environmentally conditioned origins of human races. In his early psychiatric
research he applied ideas derived from Buffon and the later anthropologists to the condition
called cretinism, now understood to be a deficiency disease. This disease had attracted his
attention owing to the fact that cretins appeared to be a sub-race of mankind, a type
exhibiting identical characteristics in many geographic locations, perhaps owing to some
influence of soil conditions. For Morel, here was a specific pathological type that had likely
originated in much the same fashion as the various racial groups. The traits characteristic of

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9 A brief discussion of Blumenbach, degeneration, and monogenism can be found in
Prichard's monogenist, bibliically orthodox ethnology, which reconstructed the history of
mankind based on anatomy, religion, customs, and especially comparative philology, is
48-53.

10 Surprisingly this direct connection between the anthropological and psychiatric
definitions of degeneration was not mentioned by Pick, although it forms one of the main
arguments of the dissertation on Morel written by Ruth Friedlander, "Bénédict-Augustin

the cretinous type had likely been induced by particular environmental conditions, yet they were evidently transmissible through the generations just like the traits that marked the different races of mankind.

Morel did however recognize at least one major difference between his theory of cretinous degeneration and the older anthropological theory. Cretins were obviously an inferior type, a "monstrous anomaly" stunted both physically and mentally. They constituted a morbid variety of mankind that would eventually become sterile and die out. On the other hand, the biological races of mankind were all obviously adapted to their own environments and able to reproduce themselves indefinitely. Nor were blacks, Asians, or Indians necessarily inferior in any respects to the white race. Morel was contemptuous of the racist opinions held by some anthropological degenerationists, who felt that the non-white races were intellectually and aesthetically inferior.¹² He was especially critical of the polygenist theory of multiple human origins because it led to the erroneous conclusion that pathological

¹²See Friedlander “Bénédict-Augustin Morel,” pp. 297-310, for passages from Morel's treatise illustrating that he held more progressive attitudes on racial difference than did many of his contemporaries. The same point is made by Rafael Huertas, “Madness and Degeneration, I. From ‘Fallen Angel’ to Mentally Ill,” History of Psychiatry 3 (1992): 396-97. Morel sided with Buffon and Blumenbach as a monogenist: he believed in the unity of mankind, the single creation of one man or one race from which all the other races had descended, and the interfertility of these varieties. In the monogenist versus polygenist debate of the first half of the nineteenth century, the polygenists such as Louis Agassiz were uncompromising racists, whereas the monogenists were often abolitionists or otherwise critical of racist attitudes. Yet as Stephen Jay Gould has pointed out, even most monogenists tended to hold up the white race as the standard in intelligence and beauty, thus implying the inferiority of so-called degenerate offshoot races. Gould, Mismeasure of Man, pp. 39-50.
degenerates such as cretins were sub-human.\textsuperscript{13}

Beginning in 1856, Morel served as director of the state mental asylum at Saint-Yon, near the city of Rouen, where he gained wide experience of various mental afflictions and devoted himself to investigating their etiology. Having earlier identified cretinism as one type of degeneracy, he now extended his theory into the psychiatric realm as an explanation for such illnesses as mania, melancholia, epilepsy, and imbecility. Popular and professional perceptions already held the mentally ill to be a degraded class of humanity, and Morel's formulation now legitimized such beliefs scientifically. Once again degeneracy was perceived as a departure from an original perfect type, analogous to the postulated relationship between the archetypal white race and its offshoots. Morel noted that his alienated patients all exhibited similar delusions, tendencies, and bodily features, a fact which indicated that their conditions might be due to a single underlying disease process.\textsuperscript{14} He termed this \textit{dégénérescence}, or a pathological deviation from the norm of the human species.

In the preface to his 1857 \textit{Traité des dégénérescences}, Morel outlined these conclusions about the etiology of mental illness:

I believe that many of the patients in our asylums today are simply the representatives of sickly breeds within society; in some cases their condition is beyond redemption. Whatever is at the root of their illness, they all exhibit, in greater or lesser degree, the marks of a degenerative state which, in most cases, is the long-term product of the formidable influence of

\textsuperscript{13}Friedlander suggests that he may even have chosen the rarely used term \textit{“dégénérescence”} to distinguish his ideas from the racist anthropologists' theory of \textit{“dégénération.”} Friedlander, “Bénédict-Augustin Morel,” p. 297.

\textsuperscript{14}\textit{Ibid.}, p. 346.
Although in this passage Morel emphasized the inheritance of a "diathesis" or predisposition to degenerative mental conditions, elsewhere in his text he postulated both intrinsic and extrinsic causes of degeneration. Insanity and other manifestations of nervous defect were often found in the family histories of his patients, but equally prominent was the occurrence of some "unhealthy influence," some external condition or immoral habit of an ancestor that had produced the hereditary diathesis in the first place. In particular Morel singled out poisons such as lead and various drugs or intoxicants, the most serious of which was alcohol. He thus began his discussion of the various degeneracies with a long chapter on alcoholism, which he described as the most urgent of all public health problems.  

By this time a body of medical knowledge already existed showing that alcoholic intoxication frequently caused insanity in drinkers themselves. Alienists saw many cases of alcoholic insanity in their asylum populations, especially those that had come from urban industrial areas where levels of alcohol consumption were generally highest. In some areas the nascent temperance movement also influenced doctors' opinions on this subject. Morel himself would have classified the ravages of heavy drinking upon the nervous system as an


acquired, first generation degeneracy. What he was more interested in however were the heritable effects of alcohol and other poisons. Thus his theory of dégénérescence and his etiological nosology were influential mainly for their emphasis upon the hereditary factor in mental illness, which in turn depended upon the novel assumption that mental and moral traits must be passed on in the same fashion as physical ones.\(^\text{18}\)

Morel’s theory included three core components: first, that most degeneracies were inherited; second, that alcoholic habits, unhealthy surroundings, or acquired diseases often initiated the hereditary diathesis; and third, that pathologies could be “transformed” into one another across the generations, often progressively worsening in a predictable series of stages. Morel described a downward spiral from alcoholism and moral depravities in the first generation, “transmuted into hereditary neurosis and criminality in the next, then into insanity, idiocy, and monstrosities in the third, and finally resulting in extinction of the stock owing to early mortality and low fertility.\(^\text{19}\) The essence of dégénérescence was this sequence of successive transformations, this “process of pathological change from one condition to another in society and in the body.”\(^\text{20}\) Degeneracy progressively worsened in a family line,

\(^{18}\)The French physician Prosper Lucas had published in 1847-1850 a Treatise on Natural Heredity, which included consideration of the laws of heredity applied to mental traits and nervous diseases. Morel was familiar with this work, as well as that of Jacques Moreau de Tours, who in 1852 had published studies on the role of hereditary constitution in epilepsy and other nervous diseases. Friedlander, “Bénédict-Augustin Morel,” p. 357; Huertas, “Madness and Degeneration, I. From ‘Fallen Angel’ to Mentally Ill,” pp. 397-98; Ian Dowbiggin, Inheriting Madness: Professionalization and Psychiatric Knowledge in Nineteenth-Century France (U of California P, 1991), pp. 54-75.


\(^{20}\)Pick, Faces of Degeneration, p. 50.
producing an accumulation of morbidity to the point of sterility and death. This could have been read as a relatively optimistic doctrine since it did not necessitate any state or medical intervention for the elimination of inferior stocks. But most of Morel’s readers and successors, including those later associated with the eugenics movement, were instead convinced that if left uncontained degeneracy would proliferate indefinitely owing to the observed high fertility of the innately unfit. Nor did Morel’s particular progression of pathologies stand up to clinical observations made by later adherents of degenerationism, such as the psychiatrist Valentin Magnan. His disciples nevertheless retained his theory’s more fundamental point that all mental disorders were interchangeable within a family. Thus late-nineteenth-century psychiatric theory commonly identified mental unbalance, low intelligence, and anti-social behaviours as manifestations or stigmata of degenerate status.

Evidence for the environmental origins, heritability, and transformation of degenerate conditions came not only from psychiatrists and their asylum populations, but also from the notorious family studies which traced such degenerate pedigrees as the “Jukes” and the “Kallikaks.” This style of research into networks of degeneracy in the population at large was originated by social workers who noticed cases in which many members of the same family had been institutionalized as paupers, criminals, lunatics, or inebriates.21 For example the Kallikaks, discovered by the American eugenicist Henry Goddard, were supposed to have been the illegitimate descendants of a Revolutionary War soldier and a feebleminded barmaid. Likewise Richard Dugdale’s pioneering 1877 study of the ancestry of the Jukes

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family was interpreted as evidence for the primacy of heredity in producing degeneracy, although Dugdale himself had intended his pedigrees to show the devastating effects of poor environment rather than morbid heredity. The method of pedigrees was later appropriated by the nascent eugenics movement as well, since such studies appeared to serve as sufficient demonstration of the cumulative effects of hereditary defect and the interchangeability of various morbid and deviant conditions.

In some medical texts the degenerationist theory was enlarged even further beyond the psychiatric realm to include all physical, mental, and behavioural abnormalities that might conceivably be inheritable. One striking example of this inclusiveness was a text on Degeneracy: Its Causes, Signs, and Results, by an American dental surgeon Eugene Talbot. Talbot began by listing the possible causes of degeneracy: heredity, consanguineous or interracial marriages, toxic agents, infectious diseases, and mental fatigue. However, the main purpose of his book was to catalogue all of the physical pathologies of the human skull, face, teeth, and body, with the help of numerous photographic images. A final chapter addressed the various psychopathologies. Talbot cited approvingly many investigators from all over the world who had come to the conclusion that "the pauper, hysteric, epileptic, prostitute, criminal, born-blind, deaf-mute, paranoiac, recurrent lunatic and idiot were buds of


the same tree of degenerate heredity."\textsuperscript{24}

Morel had articulated his theory of degeneration in a specific medico-psychiatric context, yet he always intended it to have a broader currency. He had suggested that progressive hereditary decline was often manifested not only as the mental derangements he treated in his asylum but also as lack of intelligence and self-control. For example he noted that so-called idiots and imbeciles were sometimes found to be descended from epileptics and hysterics. Other nineteenth-century psychiatrists expanded this range of mental pathologies even further to include sexual perversions—masturbation, homosexuality, and prostitution—amongst the symptoms of degeneracy.\textsuperscript{25} Yet another type of innate mental weakness called "moral insanity" was postulated under the theory of degeneration by among others the British psychiatrist Henry Maudsley. Maudsley made substantial contributions to theories of hereditary mental disease and degeneration, including his idea that criminal behaviour could be accounted for in terms of underdeveloped faculties of self-control and moral sense.\textsuperscript{26} The link between crime and hereditary degeneracy was also central to Cesare Lombroso's science of criminal anthropology. In 1876 Lombroso had first identified the


\textsuperscript{26}Henry Maudsley, \textit{Responsibility in Mental Disease} (1874; New York: D. Appleton, 1898); Pick, \textit{Faces of Degeneration}, pp. 203-15.
“born criminal” type, an evolutionary atavism whose mental and moral development had been arrested at a primitive level and whose facial and bodily features displayed certain stigmata of degeneracy.27

Perhaps the most infamous disciple of Morel and Lombroso was the German journalist, physician, and cultural critic Max Nordau, who in the 1890s introduced the concept of degeneration into the non-medical context of literary and art criticism. Loosely basing his ideas on the assumption that nervous fatigue in European civilization was the principal source of degeneracy, Nordau sensationaly denounced fin-de-siècle culture as decadent and its leading artists and thinkers, such as Wagner, Nietzsche, Tolstoy, and Zola himself; as examples of a degenerate type.28 Most of Nordau’s ideas about degenerate art met with scepticism and even ridicule from his contemporaries in the scientific and artistic communities, but nevertheless the notoriety that surrounded his book certainly helped to popularize the idea of dégénérescence across many disciplines.


28Max Nordau, Degeneration (1895; Lincoln: U of Nebraska P, 1993); Pick, Faces of Degeneration, pp. 24-26; Greenslade, Degeneration, Culture, and the Novel, pp. 120-33. Nordau is also mentioned in several essays on decadence in art, literature, and theatre published in the Chamberlin and Gilman volume Degeneration: The Dark Side of Progress.
Degeneracy as National Decline

One fashionable historiographic interpretation of the triumph of Morelian degenerationism in psychiatric circles between 1870 and 1900 emphasizes the role played by professional interests. The best example of this approach is Ian Dowbiggin’s work on hereditarianism in French psychiatry. Dowbiggin argues that the concepts of degeneration and hereditary mental disease helped this new medical discipline to achieve professional status by making it appear more scientific as well as somatically based. Its practitioners could assert that insanity was not merely a psychological phenomenon but instead it had a physical basis in heritable lesions of the nervous system, which could only be treated medically. Dowbiggin, Inheriting Madness, pp. 4-6. See also his earlier article, “Degeneration and Hereditarianism in French Mental Medicine, 1840-90: Psychiatric Theory as Ideological Adaptation,” in W. F. Bynum, et al., eds., Anatomy of Madness: Essays in the History of Psychiatry (London: Routledge, 1985), vol. 1, pp. 188-232.

Morel’s theory thereby served to legitimize the medical treatment and control of madness at a time when alienists were still competing for this domain with philosophers, psychologists, and priests. A corresponding case has been made for the state of late-Victorian British psychiatry, where elite practitioners such as Henry Maudsley, Thomas Laycock, and Thomas Clouston similarly used the somaticist theory of degeneration in an effort to establish the scientific credentials of their struggling branch of medical practice.

Expanding on this interpretation, it could be suggested that psychiatrists were not the only group that had a professional stake in the acceptance of dégénérance. Other groups of medical practitioners might also have realized that hereditarian theories could help them win greater social power and prestige. Degenerationism was used to sanction the "medicalization" of not only madness but also social pathologies such as crime, pauperism, alcoholism, and homosexuality. Members of the "hygiene" professions, which included public health officials, anti-alcohol doctors, and asylum, workhouse, and prison physicians, could proclaim that they performed valuable services to the state as experts in the treatment and prevention of these social ills, since their work was helping to regenerate national vitality. Yet while professionalization theses such as these certainly go a long way towards accounting for the success of degenerationism in nineteenth-century medicine, we should not neglect the wider social and cultural contexts that lent these discourses legitimacy.

As Daniel Pick has argued in response to Dowbiggin's emphasis on career opportunities and professional respectability among experts in mental disease, the theory of degeneration "was never simply 'instrumental'; it articulated fears beyond the merely strategic, fears of inundation. . . ." More specifically, Pick refers to the importance of class ideology in

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31 This argument is suggested for the French context by Nye, "Degeneration and the Medical Model of Cultural Crisis," pp. 29 and 36. "In a nation deeply worried about its relative vitality, doctors found their medical knowledge selling at a high premium and their social prestige greater than at any time in the previous century. They were encouraged to suggest cures for this illness in the same biological discourse in which the symptomatology of the national pathology had been originally constructed."

32 Pick, Faces of Degeneration, p. 44. He similarly criticizes Robert Nye and Jan Goldstein for suggesting that the concept of hereditary degeneracy was "just manufactured strategically in order to fabricate a conception of crisis" that would serve medical interests (p.
discussions of declining physical and moral standards among the populations of France, Italy, and England. He identifies in a number of scientific and literary texts anxieties about inundation by an urban underclass, which at various historical moments threatened social unrest or revolution in each of these national contexts. In Pick’s view, then, the most important subtext of degenerationist discourses was fear of the mob, the dangerous classes, or the criminal offender. But as I shall argue next, the recurring theme of revolution and mob barbarism had by the turn of the century largely been replaced, at least in Britain, by new class-based anxieties about the manpower resources required to maintain an expanding empire. The supposedly deteriorating physical condition of the labouring classes encompassed observations of a falling birth rate, stunted physiques, and high rates of child morbidity and mortality in Edwardian Britain. In fact Robert Nye has described nearly identical concerns about declining national health in his accounts of degenerationism in late-nineteenth-century French medical thought. For my purposes then Nye’s analysis may be more valuable than Pick’s more comprehensive history of degeneration, as I attempt in this chapter to explore some of the antecedents of British eugenic theories about the hereditary effects of alcoholism.

According to Nye, degeneracy theory enjoyed its greatest appeal in French social medicine, where it elucidated in medical terms “the various social pathologies from which the nation suffered: depopulation, crime, mental illness, prostitution, suicide, and various

organic diseases." Above all, French commentators on national health expressed alarm over the pathological fall in the birthrate since the 1870s. This demographic trend jeopardized the future of French military and industrial strength relative to the other great national powers, especially the newly unified and rapidly growing German state. The quality as well as quantity of population also appeared to be declining, insofar as vital statistics showed a high incidence of alcoholism, venereal disease, suicide, crime, and insanity. Nye's analysis thus suggests that the political meaning of degeneration in France focused less on uneasiness about violent crime and social unrest than on alarm at the deteriorating physical and mental health of the people.

These French anxieties about the diminishing size and strength of the population were closely echoed in the British context, where the military reverses of the Anglo-Boer War of 1899-1902 generated an intense sense of crisis over national efficiency and physical deterioration. Prior to that however the rhetoric of degeneration had already appeared in non-psychiatric discourses on poverty and the conditions of town life in late-Victorian Britain. An unhealthy urban environment was assumed to be the immediate source of progressive racial decadence. Although Victorian social reformers did not actually cite


34The physical deterioration crisis is described in most histories of British eugenics, such as Geoffrey Searle, Eugenics and Politics in Britain, 1900-1914 (Leiden: Noordhoff International, 1976), pp. 22-25. I discuss its relationship to both mainline and non-mainline eugenics in the first section of Chapter IV.

Morel, their use of the term degeneration in reference to the “condition of England question” had the same broad scope as did Morel’s medico-psychiatric theory. Both of these notions of degeneracy were founded upon a sense of impending cultural crisis, a belief that the unfitness and anti-social behaviour of individuals posed a threat from within to the welfare of entire nations. What Gareth Stedman Jones refers to as the “theory of urban degeneration” provided a biological rationalization for myriad social ills associated with the London poor.

During the 1880s, British social investigators such as Andrew Mearns, G. R. Sims, and Charles Booth had revealed the existence of a shockingly large “residuum” class—an urban subpopulation of casual labourers who were riddled with disease and vice, and surviving barely at subsistence levels in insanitary and overcrowded conditions. Several medical treatises dating from this period similarly dealt with the newly discovered problem of degenerate slum families. One such text, by Dr. James Cantlie, concluded that there was no such thing as a third generation Londoner, since “Nature steps in and denies the continuance” of such stunted and sickly family lines. At the same time though, Cantlie assumed that this ongoing elimination of degenerate stocks tended to be balanced out by the constant creation of new ones, as the fitter members of rural families migrated into the cities seeking better economic opportunities. As Cantlie summed up this theory of urban degeneration, “the close confinement and the foul air of our cities are shortening the life of the individual, and raising

up a puny and ill-developed race.” 37

In language that would eventually be adopted by the eugenics movement, late-Victorian social activists spoke of a “progressive deterioration of the race” caused by deleterious urban living conditions, especially as the pressures of industrialization forced more and more members of the labouring classes into the cities. They feared in part the potentially revolutionary tendencies of a brutalized, stunted slum population. 38 The degeneracy of “outcast London” was also said to entail moral decay, in the form of rising incidence of such vices as crime, drunkenness, and promiscuity. But most Victorian degenerationists appear to have been less alarmed by the prospect of immorality and political agitation than by the problem of declining physical health, or “the fate of the body in the city.” 39 Urbanization was identified by Cantlie and others as the primary source of “feeble and tainted constitutions” in both the existing population and their progeny. They thus blamed unemployment and pauperism on the biological unfitness of the people, and worried that the growing residuum class might eventually engulf or contaminate the healthy and “civilized” portions of the

37 James Cantlie, Degeneration amongst Londoners (1885; New York: Garland 1985), pp. 21-23 and 33. This Garland edition is bound with two other tracts that illustrate late-century fears about the poor health of urban populations and their progeny: J. Milner Fothergill, The Town Dweller: His Needs and His Wants (1889), and John Edward Morgan, The Danger of Deterioration of Race from the too Rapid Increase of Great Cities (1866). A series of articles and letters that appeared in the Lancet during the 1860s similarly addressed the topic of urban life as a cause of “race degeneration.” Pick, Faces of Degeneration, pp. 190-91; and Jones, Outcast London, pp. 127-29.

38 Jones has described how economic depression and underemployment during the 1880s and 90s led to a growing radicalization of both the respectable and residuum portions of the working classes, a movement that culminated in demonstrations and riots in the West End during 1886-87 and the dock strike of 1889. Jones, Outcast London, pp. 291-96 and 315-21.

39 Pick, Faces of Degeneration, p. 189.
After 1900, the rhetoric of racial degeneration merged with intensified imperialistic anxieties about whether a physically decadent lower-class population could function effectively as labourers and soldiers. Doctors and social activists associated with a number of early-century reform movements now recognized perpetually high rates of infant mortality and the poor physical condition of school children and army recruits as the most significant symptoms of biological decay. Edwardian-era fears about whether the British masses would be able to uphold the military and commercial supremacy of the nation were frequently couched in terms of the problem of national efficiency, where “efficiency” had to some extent replaced “degeneration” as the catchword of the day. Both terms conveyed a general sense of crisis over perceived national and biological decline. Yet the language of racial degeneration also remained popular, especially within the context of the eugenics movement in both its mainline and Lamarckian incarnations.

2. Temperance Science

Although speculation about the degenerating vitality of the populace in British towns had begun as early as the 1880s, it was not until the turn of the century and the Boer War efficiency crisis that this aspect of the “condition of England question” finally gained

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41 This relationship between the two terms has been suggested by Greenslade, *Degeneration, Culture, and the Novel*, p. 185. For more on national efficiency the standard source is Geoffrey Searle, *The Quest for National Efficiency: A Study in British Politics and British Political Thought, 1899-1914* (Oxford: Blackwell, 1971).
universal recognition from medical personnel, social activists, and politicians. In particular, the 1904 Inter-departmental Committee on Physical Deterioration called attention to certain noxious urban conditions, such as overcrowded housing, parental drinking, and inadequate diet, as the main sources of apparently declining health and physique in the working classes. The Physical Deterioration Report rejected any suggestion that the deplorable condition of the British populace might have more to do with inherited disease or innate unfitness than with bad environment. Yet the findings of this Committee still upheld long-standing soft hereditarian views regarding the transmitted effects of unhealthy surroundings and poisons such as alcohol and syphilis. As the report concluded, although heredity per se may not have been responsible for progressive racial deterioration, “it may well be that the depressing effects of the life-struggle on parents are, nevertheless, in some measure transmitted to the offspring.”

Whatever the Committee’s own intentions may have been regarding the question of hereditary versus environmental causes of ill health, many contemporary readers interpreted its findings as a strong defence of the notion of progressive hereditary degeneration. Most importantly for my purposes, the Physical Deterioration Report devoted considerable

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attention to the recently identified public health problem of parental alcoholism as a source of disease and arrested development in offspring. This document thus represents one especially significant point at which the subject of alcohol was introduced into early-twentieth-century degenerationist discourses. The success of this effort to direct government attention to the racial consequences of the national drink problem can be attributed largely to the continuing power of temperance interests. The Committee's findings on alcoholic degeneracy were heavily influenced by two witnesses, William McAdam Eccles and Robert Jones, who spoke on behalf of a special conference of fifteen anti-alcohol doctors affiliated with the National Temperance League and the Society for the Study of Inebriety. These temperance advocates championed beliefs about the risks of parental alcohol consumption that had in fact been established as a majority medical opinion several decades earlier by their predecessors in the Victorian temperance crusade.

Scientific research into the problem of alcoholic heredity was first launched during the 1880s by workers associated with the temperance cause in Europe and America. Such evidence had come to be regarded as a particularly compelling argument in favour of the practice of total abstinence. As will be seen next, this kind of exploitation of medical-scientific knowledge about alcohol typified the work of the distinct medical branch of the temperance movement that arose in Britain during the second half of the nineteenth century.

45 This group also submitted numerous statements by individual members and statistics on various medical aspects of the alcohol question, which were all published as an appendix to the report. Physical Deterioration Report, vol. 3, pp. 721-29. See also David Gutzke, "The Cry of the Children": The Edwardian Medical Campaign against Maternal Drinking," British Journal of Addiction 79 (1984): 73-74.
So-called temperance science embodied two general categories of research: physiological arguments against the supposed nutritional and therapeutic value of alcoholic beverages, and observations of the various pathologies associated with heavy or even moderate drinking, including its effects on the descendants of drinkers.\textsuperscript{46}

\textit{The Medical Temperance Movement}

The nineteenth-century British temperance movement has most frequently been characterized as a moral reform crusade against the vice or sin of drunkenness, led by evangelical teetotal fanatics who preached about improving the lives and saving the souls of drunkards. While most temperance lectures and literature may indeed have been cast in such religious and moralizing terms, more secular and materialistic kinds of arguments in favour of personal abstinence or restrictions on the drink traffic had also been utilized from the very start of the anti-alcohol crusade. In both Britain and America as early as the 1780s, prominent medical men such as Erasmus Darwin, Thomas Beddoes, Thomas Trotter, and Benjamin Rush had set the stage for the emergence of the moderationist, anti-spirits branch of the temperance movement with their studies of the deleterious effects of hard liquor on both the human body and the welfare of the community.\textsuperscript{47} The total abstinence branch of the

\textsuperscript{46}Much of what I shall say here about the history of temperance science and medical involvement in the anti-alcohol crusade has previously been covered in my article, \textquote{A Medical Cromwell to Depose King Alcohol\textquote{\textsuperscript{,}} Medical Scientists, Temperance Reformers, and the Alcohol Problem in Britain}, \textit{Histoire Sociale/Social History} 27 (1994): 337-65.

\textsuperscript{47}A. E. Wilkerson, \textquote{A History of the Concept of Alcoholism as a Disease\textquote{\textsuperscript{,}} (D.S.W. diss., University of Pennsylvania, 1966), pp. 39-59.
British anti-alcohol movement, which had been founded in Preston, Lancashire in 1832, similarly owed as much to secular concerns about drink and drunkenness as it did to ethical issues or religious authority.48

The first teetotal societies had been led by ambitious members of the working classes who believed that abstention from alcohol represented one essential step on the road to self-improvement and respectability.49 For the ruling classes, on the other hand, intemperance among the masses was considered problematic from the practical standpoints of public order and national prosperity. Middle-class reformers denounced drunkenness not only on the grounds that it was inconsistent with the scriptures or with a righteous Christian life, but also because it often led to violence, crime, pauperism, and inefficiency. The ideal of sobriety among working men was promoted as a means of achieving “security of property, a disciplined work force, and an expanded home market.”50 Temperance reforms such as drink control legislation and personal abstinence were thus supposed to serve as a comprehensive

48 The famous “seven men of Preston” were the first to sign the teetotal pledge renouncing the use of all intoxicating beverages. By contrast the earlier practice in the moderationist temperance societies that had sprung up in Scotland, Ireland, and England during the 1820s was to abstain only from distilled spirits, while beer was considered the “temperance drink.”

49 Lilian Lewis Shiman, Crusade against Drink in Victorian England (New York: St. Martin’s, 1988), pp. 23-24 and 29-33; Brian Harrison, Drink and the Victorians: The Temperance Question in England 1815-1872 (London: Faber and Faber, 1971), pp. 127-33 and 150-51. Harrison’s is still the best and most complete history of temperance in Britain up to the 1870s, while Shiman’s text carries the story of teetotalism and prohibitionism up to the turn of the century. Harrison in particular stresses the pivotal role of working-class leaders and initiatives in the early teetotal crusade, while downplaying the importance of organized religion. He asserts that it was not until that 1870s that the temperance movement was fully accepted by the churches and that it acquired “an almost exclusively Christian flavour” (p. 184).

50 Harrison, Drink and the Victorians, p. 95.
solution to a variety of social ills associated with industrialization. For working men themselves, the teetotal crusade epitomized above all a means to self-realization and social advancement.

Victorian anti-alcohol literature highlighted yet another material cost of intemperance, namely its effects on the physical health of individuals and the community. Heavy or chronic drinking was considered a serious social problem not only because of its association with drunkenness and other vices, but also because it could lead to illness and even premature death. Some men thus joined temperance societies owing to their views on health rather than for any moral reasons: they championed abstinence from alcohol alongside other causes emphasizing the virtues of good health and good diet, such as vegetarianism, anti-smoking, and hydropathy. Temperance reformers were also attracted to the health-related aspects of the drink problem because they believed a medical-scientific case against alcohol would serve as a particularly valuable weapon in their arsenal. It was presumed that the authority of science could provide the temperance crusade with a more universal appeal than an exclusively religious foundation could. By the 1860s and 70s, the “physical basis” of teetotal principles had in fact assumed a central position in the propagandizing work of some branches of the temperance movement. The medical-scientific aspect of the drink question became the special domain of physicians, surgeons, and scientists who possessed expertise in the study of physiology and pathology. These “temperance doctors” presented themselves as

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51 Ibid., pp. 33 and 161; Shiman, Crusade against Drink, p. 37.

52 Harrison, Drink and the Victorians, p. 190.
rational and objective professionals whose presence lent credibility to the temperance movement as a whole. Their voices would prove to be exceptionally powerful in promoting the cause among audiences who were increasingly interested in and impressed by the facts and authority of science.53

During the first half of the nineteenth century, however, the weight of medical opinion and scientific knowledge about alcohol seemed to fall more heavily on the pro-drink side of the temperance debate. Only a small minority of medical professionals supported the cause, while most were indifferent or even openly resistant. The profession as a whole continued to endorse the medical and domestic usage of moderate doses of alcoholic beverages, since it was generally believed that these could be beneficial in health and disease as a source of muscular energy or bodily heat, as a stimulant, and as a remedy for numerous ailments.54 Temperance reformers therefore felt that they had to counteract prevailing beliefs about the

53The emergence of a distinct medical temperance movement by the 1860s coincided with the mission undertaken by scientific publicists such as T. H. Huxley, John Tyndall, and Francis Galton to elevate the status and authority of science in Victorian culture. Temperance science also owed much to the birth of the social science movement around this same time, especially to the work on public health and the national drink problem undertaken by the Social Science Association after 1857. See Frank Turner, Contesting Cultural Authority: Essays in Victorian Intellectual Life (Cambridge UP, 1993); and Lawrence Ritt, “The Victorian Conscience in Action: The National Association for the Promotion of Social Science, 1857-1886” (Ph.D. diss., Columbia University, 1959).

dietary and medicinal value of alcohol if they were to persuade lay and medical audiences alike to change their traditional practices. They wanted to create a new medical consensus on alcohol as a destroyer rather than a restorer of health.

The first step towards redirecting medical opinion on alcohol was taken by a handful of teetotaling doctors who had stopped prescribing beverage alcohol to their patients as early as the 1830s. They claimed that alcohol had never been proven an efficacious remedy and suspected that the appetite for intoxicating drink was all too often aroused by medicinal and dietetic prescriptions. Initially some of these practitioners saw their personal and professional reputations suffer owing to their unwillingness to accede to orthodox medical theory and to their patients’ expectations and demands. Alcohol was in fact so vital to the medical profession at mid-century that even many temperance doctors allowed that small amounts had a proper “place and power” in treating certain types of disease. They did


57See for instance James Miller, Alcohol: Its Place and Power (Philadelphia: Lindsay and Blakiston, 1859); and William Benjamin Carpenter, The Physiology of Temperance and Total Abstinence, being an Examination of the Effects of the Excessive, Moderate, and Occasional Use of Alcoholic Liquors on the Healthy Human System (London: Henry G. Bohn, 1853). As late as 1894 one temperance doctor was still advocating the careful prescription of alcohol in cases of fever and internal inflammation, as a cardiac stimulant, and as support for the vital
nonetheless condemn the practice of administering liberal and frequent dosages as had become fashionable during the 1850s under Dr. Robert Bentley Todd's system of "alcoholic therapeutics." It was only during the last quarter of the nineteenth century that the medical branch of the temperance movement begin to agitate for the complete or near complete abolition of alcohol from private and hospital practice.

As early as the 1830s, a select group of temperance supporters had also taken up a second line of attack on the everyday use of alcoholic beverages, challenging the accepted belief that these had nutritional as well as therapeutic value. Joseph Livesey, one of the famous seven men of Preston and a teetotal lecturer, devised the original scientific force in weakening diseases. W. F. Hazell, "On the Therapeutic Use of Alcohol as Affecting Inebriety," *Proceedings of the Society for the Study of Inebriety* 41 (1894): 4-11.

The physiologist Todd's theory held that all diseases were asthenic and therefore treatable by stimulants. He believed that the consumption of alcohol in disease could stimulate the nervous system and aid the body in preserving vital power by serving as an alternative source of energy, thereby preventing the combustion of healthy tissues. After 1870, the therapeutic use of alcohol remained fashionable but was now more often justified on the clinical grounds that it reduced body temperature. On Todd's system see Warner, "Physiological Theory and Therapeutic Explanation," pp. 240-44 and 254-56. Elsewhere it has been suggested that medical practice became increasingly reliant on alcohol after mid-century owing not only to its apparent effectiveness at reducing tension and pain, but also because it filled a gap left by declining confidence in heroic bloodletting and purging. Williams, "The Use of Beverage Alcohol as Medicine," p. 563.

temperance presentation, his celebrated "Malt Lecture" first delivered in 1833. The Malt Lecture purported to expose the meagre food value of beer and other alcoholic drinks. Livesey evaporated all of the liquid from a sample of ale in order to demonstrate how little nourishing matter it really contained, and he delighted his audiences by setting fire to dishes of beer and liquor in order to demonstrate their poisonous contents. Following this example, several chemists later gave similar illustrated scientific lectures on alcohol, while a handful of temperance doctors became especially well known for the scientific content of their popular lectures.61

One especially important medical figure in the early temperance movement was Sir William Benjamin Carpenter, the respected physiologist and science popularizer. Two essays published by Carpenter in 1847 and 1850 were among the first and most influential works analyzing the physiological action of alcohol, especially the question of its nutritional merits.62 His case against the physiological necessity of alcohol was based on two kinds of direct evidence: the experiences of non-alcoholic medical practitioners and the reports of working men, armies, and arctic explorers as to the adverse effects of alcohol on strength and normal body temperature. After 1843, the question of whether the body could use alcohol in

60Harrison, Drink and the Victorians, pp. 120-25.


any constructive fashion was also addressed within the framework of a theoretical argument put forward by the German chemist Justus von Liebig. Liebig had classified alcohol as a "respiratory food," or a substance that like sugars and fats could be oxidized in the body yielding heat or energy. Opponents of teetotalism and advocates of alcoholic therapeutics enlisted this theory in their defence of the moderate consumption and prescription of alcohol. While sharing the temperance reformers' concerns about the evils of alcohol abuse, they nonetheless argued that when used responsibly alcohol could indeed produce heat and force, replace ordinary foods in the diet, or save tissues from being broken down when other food was not available.  

At the same time, however, Liebig's conclusions regarding the dietetic value of alcohol were also appropriated by teetotal forces. Temperance doctors such as Carpenter argued that even if some theoretical food value could be derived from the combustion of alcohol in the body, this process nevertheless did more harm than good by using up oxygen that would be better spent warming the body in the normal way or burning off waste materials in the blood. Carpenter criticized the followers of Liebig for focusing exclusively on the mere chemical process of combustion, while ignoring the obvious fact that alcohol was neither a safe nor an efficient article of the diet because of its toxic effects on the vital functions.

Public dialogue on the question "is alcohol food or physic?" continued into the second

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64 Carpenter, On the Use and Abuse of Alcoholic Liquors, p. 122. Similar points were made by Miller, Alcohol: Its Place and Power, p. 62; and Lees, Selected Works, vol. 6, pp. 152-99. Even Liebig himself eventually conceded that alcohol was not a desirable foodstuff. Wilkerson, "History of the Concept of Alcoholism as a Disease," p. 99.
half of the century, now fuelled by new experimental findings on the physiological and chemical fate of alcohol in the body reported in 1860 by three French investigators. Based on a series of simple, non-quantitative tests performed on dogs and men, these workers concluded with unjustified confidence that all ingested alcohol was excreted unchanged through the lungs, skin, and kidneys. Some British teetotalers interpreted this result as experimental verification of their belief that alcohol could not support life as an aliment or a stimulant. But other supporters of the cause were disturbed by the idea that alcohol might rapidly pass through the body unchanged—how then did it cause its manifest pathological effects on tissues? They therefore cited Liebig’s respiratory food theory instead, supplemented by mounting experimental evidence showing that the combustion of alcohol did not provide enough useful force or heat to counterbalance the damage produced by immoderate consumption. Much of this original experimental work had been carried out by the leading British expert in the medical-scientific study of alcohol, the physician, sanitary reformer, and temperance advocate Sir Benjamin Ward Richardson.

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68Richardson was best known in temperance circles for his “Cantor Lectures” on alcohol delivered before the Edinburgh Society of Arts in 1874-75. These were reprinted in Benjamin Ward Richardson, Ten Lectures on Alcohol (New York: National Temperance Society, 1887), pp. 1-190. His alcohol experiments were also reported in his Results of Researches on Alcohol (London: W. Tweedie, 1877).
Richardson's investigations were straightforward and uniquely quantitative. He measured the body temperature of alcoholized animals, discovering that ingested alcohol did not warm the body but in fact dangerously reduced its temperature. Then in order to determine whether or not alcohol could be converted into muscular energy, he measured the lifting power of a frog's leg and found that it was enfeebled with alcohol. Nineteenth-century temperance writers eagerly seized upon these simple findings as the best available proof for their belief that alcohol was not a wholesome article of the diet. Richardson himself had only become a teetotaler in the late 1860s, as a consequence of some research he had undertaken into the physiological effects and medicinal efficacy of various chemical substances, including the alcohols. He came to be the acknowledged leader of the medical temperance movement and credited himself with having laid the "scientific basis of the temperance reformation" by providing physiological evidence that ethyl alcohol was both unnecessary and evil. His years of experimental work with animal subjects also led to numerous discoveries about how alcoholic intoxication affected the circulatory, digestive, and nervous functions. Richardson even contributed to the clinical and experimental study of chronic alcoholic disease, work which provided him with pathological details and pictures used to shock his audiences during his many temperance lectures of the 1870s and 80s.

While medics had had relatively little involvement in the early history of the British

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teetotal movement, by the 1860s they assumed a more pronounced role as propagandists and investigators of the physical aspects of the drink question. Temperance doctors produced hundreds of books, pamphlets, and lectures devoted specifically to medical-scientific issues, while the dissemination of this knowledge was sponsored by the nation's largest temperance organizations, namely the National Temperance League, the Church of England Temperance Society, and the prohibitionist United Kingdom Alliance. Likewise major temperance and prohibition conferences invariably sought to capitalize on medical authority by incorporating special sections for papers given by medical men on health-related and scientific topics.

Because of their authoritative position and powerful influence on public opinion, medical men and women were specially courted by temperance societies in the hopes that they would lend their names and their labours to the cause. In particular, the National Temperance League (NTL) began campaigning in 1869 to alert medical professionals to the national drink problem and their potentially crucial role in addressing it. In 1876, the NTL

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71 Some idea of the extent of this medical temperance literature in the second half of the century can be gained from the 400-page bibliography compiled by Emil Abderhalden, *Bibliographie des gesamten wissenschaftlichen Literatur über den Alkohol und den Alkoholismus* (Berlin and Vienna: Urban and Schwarzenberg, 1904).

72 One early example was the International Temperance and Prohibition Convention held in London in 1862, which included eight papers on temperance as sanitary medicine, the treatment of inebriety, the pathology of alcohol, and the medicinal use of alcohol. *Proceedings of the International Temperance and Prohibition Convention* (London: Job Caudwell, 1862). More medical-scientific contributions were made at the National Temperance League congresses held in Liverpool 1884, Birmingham 1889, and Chester 1895, and at the International Congresses against Alcoholism held in Antwerp 1885, Zurich 1887, Christiania 1890, Basle 1895, Brussels 1897, Vienna 1901, Budapest 1905, Stockholm 1907, and London 1909. A summary of all of these scientific papers was provided by J. T. Rae in his preface to the *Proceedings of the Twelfth International Congress on Alcoholism* (London: Paternoster House, 1909), pp. 5-6.
spawned a daughter organization called the British Medical Temperance Association (BMTA), which was to serve as a "rallying-point for all medical abstainers." Richardson acted as president of this association from 1879 until his death in 1896, and his name and reputation were said to have attracted many new members to the medical temperance movement. The goals of the BMTA were to provide encouragement to teetotal doctors, to convert more practitioners to the temperance cause, to promote scientific investigation into the effects of alcoholism, and to convince the profession in general that alcohol ought not be recommended as food or physic. By 1898, membership in the BMTA had reached almost 900 practitioners and students across Great Britain, along with 5,000 subscribers.

The principal rationale behind the founding of the BMTA and the medical temperance movement was to promote personal abstinence as the first and most important step towards solving the national drink problem. Rarely in the medical literature was mention made of

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73 J. J. Ridge, *The Aims and Claims of the British Medical Temperance Association* (London: National Temperance Publication Depot, 1886), p. 3. See also "Origin and Rules of the British Medical Temperance Association," *Medical Temperance Journal* 7 (1876): 164-68; William Gourlay, "National Temperance": A Jubilee Biography of the National Temperance League, Instituted 1856 (London: Richard J. James, 1906); and the entry on the "National Temperance League" in *Standard Encyclopedia*, vol. 4, pp. 1861-63. The NTL was established in 1856 as the very first nation-wide teetotaling association. It promoted itself as non-sectarian and educational in character, eventually becoming known as the most scientifically oriented of the major temperance organizations. The League held conferences and annual breakfast meetings with the British Medical Association, organized lectures and distributed scientific tracts, advocated introducing school lessons on temperance, and arranged an 1871 medical declaration against excessive alcohol use signed by 269 eminent London practitioners.

74 *Medical Temperance Review* 1 (1898): 52. This journal (published 1898-1919) succeeded the *Medical Pioneer* (1892-1897) and the *Medical Temperance Journal* (1869-1892) as the organ of the BMTA.
legal means of restricting access to alcohol, such as licensing reform, Sunday closing, or local option. Few temperance doctors chose to take sides in the contentious debates over legislative action that were hindering the progress of the temperance reformation. Since mid-century, temperance reform in Britain had incorporated both political campaigns for drink control legislation and what was termed a "moral suasionist" approach, which emphasized encouraging individuals to practice total abstinence.\textsuperscript{75} The tactics favoured by the medical

\textsuperscript{75}The early teetotal movement in Britain had relied on the methods of moral suasion rather than legal coercion. During the 1830s and 40s, many of its most charismatic leaders were reformed working-class drunkards who preached self-help as the means of rescuing their fellow workers from degradation and misery. When middle-class reformers finally jumped on the temperance bandwagon in the 1850s, political and legislative efforts to curb drink sales came to take centre stage over what were perceived as failed efforts at individual persuasion and reclamation of drunkards (groups such as the National Temperance League did however continue the apolitical approach, resulting in a major schism within the anti-alcohol movement). The leading prohibitionist organization in Britain was the United Kingdom Alliance (UKA), formed in 1853 on the model of the successful prohibition campaign recently waged in the state of Maine. By 1864, the UKA had abandoned dreams of complete elimination of the national drink trade and instead turned to Local Option, which would allow local communities to ban the sale of drink. The UKA attempted unsuccessfully to push through its Permissive Bill by campaigning for prohibitionist MPs, most of whom belonged to the Liberal Party after 1872. Meanwhile other branches of the temperance movement sought more moderate legislative alternatives to Local Option. They founded the Sunday Closing movement in the 1860s, while Bruce's Licensing Bill introduced in 1871 would have made it possible for municipalities to vote to reduce the number of liquor licences and make other improvements to drinking establishments. A Liberal victory in the election of 1880 opened the doors for temperance legislation, but infighting between the prohibitionists and moderationists meant that for six years the government received no guidance on what kind of drink control bill was desired. Two kinds of Local Option were now proposed, one which would introduce local prohibition and one which would reduce the number of licences in a locality by one-quarter. However, the main point of contention was the issue of compensation for drink sellers affected by Local Option. The UKA's hard line denying any right to compensation was resisted by other anti-drink forces, and the lack of a single platform meant that the movement as a whole remained politically ineffectual throughout the 1880s and 90s. See Harrison, \textit{Drink and the Victorians}; Shiman, \textit{Crusade against Drink}; and A. E. Dingle, \textit{The Campaign for Prohibition in Victorian England: The United Kingdom Alliance 1872-1875} (New Brunswick: Rutgers UP, 1980).
temperance movement, which focused on elaborating and disseminating knowledge about the physiology and pathology of alcohol use, might thus be described as a scientific or rational version of moral suasion.

Richardson for example declared it to be the special power and responsibility of the medical temperance movement to guide public opinion on the drink question by making available the medical-scientific facts. This work would serve to pave the way for future legislative action.\(^{76}\) He further argued that while the religious and legal aspects of the alcohol question were important in their own right, "the prelate and the legislator can hardly have more intimate conversance with the influence of alcohol than the physician and man of science."\(^{77}\) Similar sentiments about the unique role to be played by medical experts in the anti-alcohol campaign were expressed by the medical officer of health John James Ridge, a long-time teetotaler and the founder and secretary of the BMTA. Ridge acknowledged that the problem of drunkenness certainly ought to be addressed by "the Christian and moralist," yet insisted that because it involved the physical influence of drugs and disease, alcoholism could only be fully understood in medical and scientific terms:

The future of the temperance movement depends upon the adoption of right views on the position and action of alcohol on the human organism, both mind and body. What those views should be ought to be decided by medical scientists. The effect of alcohol on mind and body is part of that physiology which is the "proper study"


of the profession. The world waits for a clear and authoritative declaration.78

*To the Third Generation*

Medical temperance tracts and lectures dating from the 1830s to the 1930s routinely recited long lists of clinical observations on the pathologies believed to result from long-term alcohol abuse, including cirrhosis of the liver, heart disease, dyspepsia, dropsy, delirium tremens, and insanity.79 Temperance propagandists also invoked alcohol-related mortality and accident statistics, along with life expectancy tables drawn from temperance life insurance associations showing that the teetotaling groups enjoyed better health than the

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78Ridge, *Aims and Claims of the BMTA*, p. 3. Another BMTA member, Dr. Kate Mitchell, likewise asserted that it was not philanthropists, clergy, or legislators who held the key to the alcohol problem, but rather medical professionals because they possessed knowledge and cultural authority: “surely King Alcohol has had a long reign, and now deserves that a medical Cromwell should put an end to his existence.” Mitchell, *The Drink Question*, p. 189.

79The first such comprehensive catalogue was Grindrod’s *Bacchus*, while the last of the British medical temperance tracts was Courtenay C. Weeks, *Alcohol and Human Life*, 2nd edn. (London: H. K. Lewis, 1938). It was generally assumed that these alcoholic pathologies mainly occurred in cases where there had been long-term soaking of the tissues. However, most nineteenth-century temperance doctors equally condemned the relatively harmless habits of moderate and occasional imbibing, on the grounds that these represented possible starting points for more dangerous chronic and heavy drinking habits. Alternatively, it was sometimes assumed that small doses frequently repeated could have a cumulative poisoning effect, especially on the nervous system. There was little scientific agreement as to what the “safe” cutoff point for alcohol consumption might be. Most anti-alcohol tracts cited figures of between 1 and 2 ounces of alcohol per day (equivalent to 1 or 2 pints of beer) as the maximum that could be metabolized by the body. But competent investigations into the effects of relatively small doses on the physiology and pathology of the human organism were only undertaken after the First World War, under the auspices of the British Medical Research Council.
Coroners' inquests implicated alcohol poisoning as the single leading cause of sudden deaths in adults, a finding which one authority declared to be a "weapon of considerable power in the armoury of those who are fighting the battle of temperance." The medical-scientific branch of the teetotal movement also called attention to the appearance of disease and debility in the offspring of drinkers. In fact by the late nineteenth and early twentieth centuries, evidence regarding the grave effects of parental inebriety to the second generation and beyond had become an especially important plank in the temperance platform.

The eighteenth-century "gin craze" had first inspired reform-minded physicians to seek scientific and clinical support for ancient beliefs about the transmissible effects of parental drunkenness. Medical writers newly alerted to the health risks of excessive liquor

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80 On the other hand, an 1888 British Medical Association survey that seemed to draw just the opposite conclusion about the longevity of drinkers and abstainers was soundly criticized by anti-alcohol forces. The BMA Committee on Disease and Alcohol had sent a survey to 13,000 members asking about their professional experiences with alcoholic disease and mortality. While in fact the Committee felt they did not have enough data to draw any firm conclusions regarding the effects of moderation versus abstinence, the press widely reported their results as showing that abstainers tended to die younger than either moderate or heavy drinkers. Temperance writers argued in response that the data had likely been skewed by the fact that most converts to the teetotal movement were still young men, and therefore the average age at death of this group had to be lower regardless of the causes of death. Norman Kerr, "Does Inebriety Conduce to Longevity?" Proceedings of the Society for the Study of Inebriety 20 (1889): 1-8.

81 W. Wynn Westcott, "Alcoholic Poisoning in London, and Heart Disease and Its Fatal Result," Proceedings of the Society for the Study of Inebriety 30 (1891): 3-8. Westcott declined to identify himself as a supporter of teetotalism, but his work was frequently cited in the temperance literature. Here he reported that in several large samples of inquests he himself had performed in London, 1 out of every 4 to 5 sudden deaths had been due to chronic intoxication, especially from fatty degeneration of the heart.

consumption noted for instance that drinking parents were likely to have a lower fertility rate and to give rise to "weak, feeble and distempered children." They believed that intoxication at the time of conception might leave its mark on the child's constitution, and that parents debilitated by chronic alcoholic disease might pass on abnormalities or reduced vitality. In his famous 1804 *Essay on Drunkenness*, the Scottish physician Thomas Trotter further suggested that the organs of generation in both sexes were likely to suffer due to frequent intoxication, with the result that any offspring derived from such parentage "must be diseased and puny in its corporeal parts; and beneath the standard of a rational being in its intellectual faculties." Another early reference to alcoholic taint in offspring was made by the first British governmental inquiry into the problem of intoxication among the labouring classes, which reported in 1834. As part of its discussion of the health-related consequences of heavy drinking, this committee made a statement about drink's "accumulated evils" on subsequent generations. It was suggested that pre- and post-natal exposure to alcohol was creating a progressive decay in the physical fitness of the population and thereby threatening the long-term welfare of the nation:

Intemperate parents, according to high medical testimony, give a taint to their

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83This phrase was used in a 1726 College of Physicians petition to Parliament for control of the gin trade, cited by George, *London Life in the Eighteenth Century*, p. 33.

offspring, even before its birth, and the poisonous stream of ardent spirits is conveyed through the milk of the mother to the infant at the breast; so that the fountain of life, through which nature supplies that pure and healthy nutriment of infancy, is poisoned at its very source, and a diseased and vitiated appetite is thus created, which grows with its growth, and strengthens with its increasing weakness and decay.  

Despite this early medical interest in this aspect of the drink question, by mid-century anti-drink forces in England were making only occasional reference to existing knowledge and opinions about alcoholic heredity. One historical survey of temperance literature on drinking and offspring prior to 1865 was able to list only about a half dozen such British sources.  My own research has similarly revealed that medical temperance tracts written by prominent abstaining practitioners such as R. B. Grindrod, F. R. Lees, W. B. Carpenter, and B. W. Richardson only briefly mentioned the special problem of hereditary alcoholic disease. Carpenter, for instance devoted just a few pages to the topics of mental debility in the offspring of drinkers and the inherited drink habit.  Likewise in the almost 200-page text of Richardson’s Cantor Lectures on the physiology and pathology of alcohol, only a single paragraph near the end addressed the issue of how the temperance reformation might improve the well-being of future as well as current generations:

The most solemn fact of all bearing upon these mental aberrations produced by alcohol, and upon the physical not less than the mental, is that the mischief

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inflicted on man by his own act and deed cannot fail to be transferred to those who descend from him.88

During the first half of the century, most medical-scientific temperance literature focused on combatting false beliefs about how alcohol might benefit the body in sickness and health and demonstrating its poisonous action on the drinker himself. Temperance science largely restricted itself to research in physiology and pathology, while less attention was devoted to either the sociological aspects of the alcohol problem or considerations of racial health. During the last quarter of the century, however, more and more doctors and researchers affiliated with the temperance movement began to study the phenomena of hereditary alcoholic degeneration and to speculate on possible mechanisms. In fact by the 1880s, anti-alcohol reformers throughout America, Europe, and Britain had accepted it as truisms that the drink habit could be inherited and that excessive alcohol use could have deleterious effects on children.89 Medical men began undertaking research designed to substantiate existing beliefs about the hereditary dangers of drink. More systematic investigations now included for example laboratory research on blastophthoric degeneration and large-scale social surveys correlating ancestral alcoholism with mental disease and deficiency. These studies were undertaken mainly by German, French, and American temperance supporters.90 Knowledge about the role of alcohol in progressive racial

88Richardson, Ten Lectures on Alcohol, p. 177.


90Many of the investigators mentioned in the last chapter, such as Auguste Forel and Gustav von Bunge, were anti-alcohol doctors. See Bynum, “Alcoholism and Degeneration,” pp. 63-64; Warner and Rosett, “Effects of Drinking on Offspring,” p. 1404; and the entry on
degeneration thus originated within the context of temperance science in many nations, where it served alongside other physiological and pathological findings as part of the scientific attack on the drink problem.

Although British temperance doctors did not conduct much original research on the subject of alcoholic heredity, many of their late-century propagandist tracts included discussions of the available scientific evidence. The "rational suasionist" campaign now invoked alcohol's appalling toll in human life with respect not only to drinkers but also their innocent children. Temperance writers also implicated alcohol as a source of the progressively worsening vigour of the population as a whole: they adopted the language of racial deterioration and the same Lamarckian notions being utilized by hereditarian psychiatry and the theory of urban degeneration. One example of this genre of temperance propaganda was an 1889 prize-winning essay which devoted an entire chapter to the topic of alcohol as an "enemy of the race." This author urged that total abstinence be recognized as every parent's duty towards his or her progeny, and he speculated that drinkers might transmit their miseries to children in two distinct ways. "The pathological changes occasioned by excess in alcoholic beverages" might be transmitted through some Lamarckian mechanism, while in other cases "the drink crave itself reappears" in the offspring of habitual drunkards.91


91William J. Lacey, The Case for Total Abstinence (London: National Temperance Publication Depot, 1889), p. 108-9. This usage of the phrase “drink crave” rather than the more familiar “craving” can be found in some nineteenth-century alcohol literature and is recorded in the OED.
Another temperance text entitled *The Foundation of Death* attempted to provide a global summary of the state of scientific knowledge about the nature of alcohol up to 1884. The author devoted a short chapter to "the curse entailed on descendants," arguing that parents and prospective parents ought to be persuaded to abstain on the grounds that drinking also touched the lives and rights of generations to come.\(^{92}\) Similarly an 1891 text by Dr. Kate Mitchell, outlining the special duties of the medical temperance movement, included a long discussion of the preventible lower-class problems of infant mortality and deteriorated health in offspring caused by alcohol consumption.\(^{93}\) Mitchell noted that the children of drunkards ran the risk of inheriting the alcoholic neurosis itself, or else they were likely to suffer from a diversity of organic diseases and functional derangements, including anaemia, rickets, scrofula, nervous diseases, mental dullness, and moral depravity. The degenerate posterity of heavy drinkers tended to die out after three or four generations, once insanity, epilepsy, and idiocy left them completely unable to reproduce. Mitchell also cited several fellow BMTA members, such as Norman Kerr and James Edmunds, as early authorities on the connection between maternal inebriety and infant fatalities. All of these temperance publications made use of arguments and observations regarding the injury done by pre- and post-natal maternal

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\(^{92}\)Gustafson, *The Foundation of Death*, pp. 171-80. Gustafson was a Swedish temperance writer living in London. His text consisted almost entirely of quotations from other sources, including a dozen medical authorities on alcoholic heredity.

drinking that would later be employed by the Edwardian infant welfare campaign.

Another especially notable example of British interest in alcoholic degeneracy before the turn of the century was the experimental work undertaken by the temperance doctor J. J. Ridge. Ridge's research on the effects of alcohol on plant growth was almost ludicrously simple, yet he still drew sweeping conclusions from it that were frequently cited in the anti-alcohol literature.\textsuperscript{94} He had cultivated cress and geranium seeds watered with diluted alcohol solutions and then compared the inhibited growth of these specimens with non-alcoholized control groups. His discovery that even minute amounts of alcohol could have a marked effect on plant growth, which was further confirmed in another series of simple investigations into the development of blow-fly eggs exposed to alcohol, inspired him to make weightier pronouncements on how the poison must likewise exercise its most harmful effects on the growing cells of human embryos and young children. Although not strictly relevant to the question of the possible hereditary effects of alcohol, Ridge's work nonetheless suggested how exposure to alcohol in the womb or at the breast might cause physical deterioration in offspring. His experiments proved particularly valuable as graphic evidence for the virtues of abstinence, and in fact he employed slides of his healthy and stunted plants set side by side to illustrate his scientific temperance lectures and texts.

While the medical-scientific branch of the temperance movement in Britain made extensive use of ideas about alcohol as a source of degeneracy in individuals and the race, an

even stronger connection between anti-alcohol sentiments and degenerationist discourses was forged by doctors in France. A number of French alienists who incorporated alcoholism into their theorizing on the etiology of mental disease were also pioneers in the fight against alcohol in that country. These individuals consequently played a doubly important role in the history of ideas and research on alcoholic heredity, since they represented both the psychiatric and temperance perspectives on degeneration. For example, two of the most prominent disciples of Morel’s psychiatric theory of dégénérescence, Valentin Magnan and his student Paul Maurice Legrain, were equally well known as a temperance lecturer and as the founder of a major temperance league, respectively. Another prominent French degenerationist, Charles Féré, was likewise often cited in the international temperance literature for his laboratory research on alcohol and embryonic development. As the main group of medical-scientific experts specially interested in the national drink problem, hereditary psychiatrists such as these inaugurated the scientific study of alcoholism and alcoholic pathologies. They hoped that their experimental work, family studies of asylum patients, and social surveys

illustrating the morbid heredity of habitual intemperance would simultaneously serve two purposes, namely "demonstrating the close relationship between alcoholism and mental derangement and setting the guidelines for the war against alcohol."  

The anti-alcoholism movement in France was not established until the 1870s, and unlike its British counterpart it was not founded by working men and evangelicals but rather by medical professionals. Medical definitions of the risks of alcohol abuse thus occupied a central position in French anti-alcohol work that was never paralleled in the British or American contexts. French doctors and alienists were specially interested in the consequences of heavy drinking on the health of the individual and the community. They addressed the problem of intemperance in the name of national fitness and prosperity, recognizing alcoholism as a principal fin-de-siècle "symbol of national decline" and basing

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96Huertas, "Madness and Degeneration, II. Alcoholism and Degeneration," p. 3.

97Prestwich explains this delay in terms of production and consumption patterns: whereas in England perception of drinking problems began with the mid-eighteenth-century gin epidemic, in France an increase in the use of the more noxious distilled beverages did not begin until the 1850s. Prestwich, Drink and the Politics of Social Reform, pp. 4-5.

98The policy proposals of the French anti-alcohol movement encompassed on the one hand prevention and treatment of chronic alcoholism itself, and on the other temperance education and repressive legislation aimed at curtailing drink-related debilities in the lower classes. The unique properties of absinth may also have had something to do with French doctors' and social reformers' decision to oppose alcohol use on public health rather than moral grounds. A cheaper and more dangerous form of absinth had become the most popular working-class drink in the 1880s, and studies by Magnan and others showed that the essences in this particular beverage could cause hallucinations, convulsions, and a violent form of insanity, as well as hereditary defects in offspring. The government finally passed a ban on absinth during the First World War, but in 1922 legalized the manufacture of similaires that had most of the characteristics of absinth but were less toxic. Ibid., pp. 128-40.
their temperance reforms on medical rather than moral concepts.99

Just as alcohol figured prominently in nineteenth-century anxieties about declining population size and deteriorating national vitality, so too did it appear in the psychiatric theories put forward by Morel, Magnan, and other French alienists. As described at the beginning of this chapter, the Morelian theory of dégénérescence had emphasized both hereditary predisposition and ancestral drinking in the etiology of insanity and other forms of mental derangement. Alcohol was implicated as both cause and symptom of mental degeneration in individuals and their descendants. By the 1880s, the main tenets of degenerationism had found widespread acceptance within the French psychiatric discipline.100 As an organicist and hereditarian theory, it could both justify the medical management of mental illness and account for the continuing failure of such treatment. But for many French doctors this theory of how alcohol could initiate a downward spiral of hereditary neuropathologies also represented yet another medical argument in favour of total abstinence and liquor control. Owing to its heritable effects on the nervous system, widespread alcohol abuse posed a threat to the future mental as well as physical health of the populace.

The 1880s and 90s were the heyday of dégénérescence in Germany, Britain, and

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99Ibid., pp. 2 and 37.

100A reformulated version of dégénérescence, which eliminated the religious overtones of Morel’s original doctrine and incorporated more current evolutionary views, was popularized in particular by the alienists Magnan and Legrain. These authors concurred with their predecessor’s opinion that habitual intemperance was a principal origin of the hereditary diathesis. Huertas, “Madness and Degeneration, I. From ‘Fallen Angel’ to Mentally Ill,” pp. 406-11. The hegemony of hereditarian explanations in French psychiatry before 1900 has been treated most thoroughly by Dowbiggin, “Degeneration and Hereditarianism in French Mental Medicine,” pp. 188-232.
America as well, where some of the most prominent mad-doctors adopted the new doctrines linking insanity, alcoholism, and progressive hereditary decay. Madness was classified as an organic disease and a manifestation of pathological heredity which might be transformed over the generations into other conditions such as epilepsy, idiocy, alcoholism, and criminality. Most importantly, hereditarian psychiatrists agreed that an alcoholic habit could not only lead to insanity in drinkers themselves but also originate the neuropathic predisposition to mental disease in the descendants of drinkers. These authorities thus contributed to cementing an international consensus on the relationship between pathological heredity and excessive alcohol consumption. For instance the famous German degenerationists Wilhelm Griesinger and Richard von Krafft-Ebing helped to legitimize ideas about alcoholic heredity by identifying drunkenness as both cause and symptom of nervous disease.¹⁰¹ Likewise in Britain influential alienists such as Henry Maudsley and Thomas Smith Clouston promoted and utilized the degeneration theory, including its teachings on the transmissible effects of parental indulgence.

As the author of ten books on psychiatry and editor of the *Journal of Mental Science*, Maudsley was the acknowledged intellectual leader of the British psychiatric community from the 1860s until the turn of the century. His was an especially bleak version of degenerationism that encompassed madness, vice, and even genius. For Maudsley, the fact that insanity was often inherited meant that it was also likely incurable: degenerate individuals were doomed by the "tyranny of their organization," while the only way to

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eliminate their hereditary taint from the population was through what would later be called negative eugenics. Echoing Morel, the materialist and evolutionist Maudsley maintained that human degeneracies were often initiated by unfavourable conditions of life and then transmitted in progressively worsening forms through the generations, resulting in "a morbid variety of the human kind, which is incapable of being a link in the line of progress of humanity."102 As a firm believer in the inheritance of acquired somatic modifications, Maudsley recognized parental intemperance as one significant source of the hereditary diathesis that produced insanity and other nervous diseases. Although he was not as preoccupied with the fight against alcohol as were many of the French alienists, he nevertheless asserted that drink was the most frequent exciting cause of insanity and originating cause of hereditary degeneracy.103

3. The Society for the Study of Inebriety

The third group of medical professionals responsible for legitimizing notions of hereditary alcoholic degeneration in Britain were the inebriety experts who belonged to the


Society for the Study of Inebriety. In the last chapter I briefly discussed the self-consciously "scientific" work on alcohol problems undertaken by the SSI during the period 1900-1915. At that time the racial poison theory and concerns about maternal drinking figured especially prominently on the Society's public health oriented agenda. But earlier in that organization's history a different approach to addressing alcohol problems had been favoured by most of its members: the SSI was originally founded by physicians and alienists who had a professional interest in the treatment of addiction to alcohol and other drugs.\textsuperscript{104} They aspired to emulate the successes of their American counterparts who had already founded a new medical speciality for the study and cure of the disease of inebriety.\textsuperscript{105} These doctors had begun to forge careers for themselves as directors, superintendents, and physicians to the treatment facilities for inebriates established throughout the United States since the 1850s. In Britain, delayed recognition of the need for special care and management of chronic alcohol abusers meant that agitation for similar institutional provisions and professional positions only began in the 1870s.\textsuperscript{106}

As was the case with the French degenerationists, many of the British inebriety doctors


were also champions of the anti-alcohol movement, committed to using scientific fact and theory to further that reform cause. The SSI itself was never intended to be a temperance or teetotaling organization, yet most of its members were nonetheless active in such groups and supported various approaches to restricting alcohol consumption by the population at large. They therefore recognized the cure and prevention of alcohol problems as complementary reform programmes. Moreover, official SSI doctrine included hereditarian interpretations of the etiology of alcoholism that were similar to the degenerationist theories promulgated by the alienists and temperance reformers discussed in the previous section. The Society's favoured organic disease explanation of habitual drunkenness was likely derived from ideas about how various mental maladies might arise from a hereditary diathesis induced in past generations by drinking or disease. By the 1890s, however, tensions had arisen within the Inebriety Society over traditional views of alcoholic degeneration, especially insofar as these were considered to be products of temperance science or dependent upon outmoded Lamarckian doctrines. Challenges to soft hereditarian theories of alcoholism forced the majority of SSI members to close ranks and defend their opinions on alcoholic heredity.

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107Berridge, “Society for the Study of Addiction,” p. 993. Early members of the SSI included the prominent temperance doctors Carpenter and Richardson, while the strong teetotal sentiments of many other members were indicated in the papers and discussions that took place at the Society’s quarterly meetings and printed in its Proceedings. The Society’s official stance on its relationship to the legislative and moral approaches to drink control was spelled out by this spokesman: “We are not here as moralists or as social reformers. We are not banded together in this Society to discuss such questions for instance as Sunday closing or prohibition. Individually we may have very decided opinions on these questions, but here we assemble as scientific physicians to discuss the disease of inebriety, not the vice of drunkenness.” James Stewart, “Prevention of the Development of Inherited Inebriety,” Proceedings of the Society for the Study of Inebriety 31 (1892): 2.
The Physical Disease Concept of Inebriety

Since 1884, the Society for the Study of Inebriety had aimed to serve the interests of doctors who specialized in the treatment of alcohol addiction, or what was at the time termed inebriety or dipsomania. Led by its first president Norman Kerr, the SSI joined the British Medical Association in lobbying the government and rallying public opinion for the establishment of special reformatories for habitual inebriates. Once sent to such reformatories on either a compulsory or voluntary basis, drunkards would be removed from the temptation of drink for an extended period of time and subjected to regimes of medical and moral treatment in the hopes of achieving permanent cure. The 1879 Habitual Drunkards Act took the first steps towards setting up a national treatment system, as it facilitated the state licensing and inspection of private, voluntary retreats for upper-class alcoholics. However, this legislation only partially satisfied the demands of the inebriety doctors, who were intent on seeing reformatory treatment extended to poor and criminal drunkards as well. In 1898 the SSI’s lobbying efforts led to the passage of the first Inebriates Act, which permitted magistrates to sentence individuals convicted of three or more drunkenness offences within a 12-month period to a compulsory term in one of the 14 state and

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108 Thorough accounts of the history of the Habitual Drunkards and Inebriates Acts have been supplied by MacLeod, “The Edge of Hope;” and Leon Radzinowicz and Roger Hood, “Curing and Restricting the Habitual Drunkard,” in A History of English Criminal Law and its Administration from 1750 (London: Stevens, 1986), vol. 5, pp. 288-315. It was often argued that both occasional and habitual drunkenness were much more serious problems in the lower strata of the population, where a greater number of the worst type of inebriates were “largely increasing disease, destitution, and crime, and consequently continuous gravitation to our Hospitals, Poorhouses, Asylums, and Prisons, imposing a corresponding heavy burden on local taxation, and the funds of the Nation.” Alexander Peddie, “Habitual Drunkards Act, 1879,” Proceedings of the Society for the Study of Inebriety 7 (1886): 9-10.
municipally funded inebriate reformatories. In order to justify such a novel policy of institutionalized medical care for alcoholics of all social classes, the SSI and in particular its president Kerr relied heavily on the physical disease concept of inebriety.

Norman Kerr, medical officer of health for Marylebone and a teetotaler since the age of 21, served as the controlling force behind the Inebriety Society from its founding in 1884 until his death in 1899. In his many publications for both the SSI and the temperance cause, he propounded the theory that habitual inebriety or dipsomania was a disease of the nervous system closely allied to insanity. The disease condition was usually caused either by a hereditary diathesis or by excessive indulgence itself, owing to alcohol's special affinity for brain cells. The "depraved, debilitated, or defective nervous organisation" of the dipsomaniac was manifested as a morbid impulse for intoxication. Kerr's career as an expert in alcohol problems therefore focused on demonstrating the "great truth that Inebriety is a disease, as curable as most other diseases, calling for medical, mental and moral treatment."^109


While it might be expected that this doctrine of inebriety as an inherited, somatic condition would lead to therapeutic nihilism, in fact Kerr and his SSI colleagues presumed that many or even most drunkards could be reclaimed if only they were provided with constant and long-term medical attention in an institutional setting. Prior to the start of the reformatory experiment in 1899, the inebriety doctors were able to express unbounded optimism about the chances of curing this new class of patients. They complained that the short prison sentences customarily handed out to drunken offenders could do nothing to address the root of their problems: habitual drunkards were notorious as police court recidivists, who once released from prison invariably returned to their dissolute ways. The disease concept of inebriety thus served both to account for this behaviour and to legitimize the medical treatment of habitual drunkards. In the following passage, Kerr tried to explain away the apparent contradiction between a hereditarian mode of thought and the therapeutic confidence of the first generation of inebriety experts:

It has been pleaded that to concede inebriety to be a physical disease will result in the inebriate believing that his conduct is beyond his control, that he is irresponsible for his inebriate indulgence, and that there is no chance of his deliverance from a career of drunkenness. . . . So far from riveting the chains of inebriety on the inheritor of the disease, a knowledge of his actual condition will indicate the adoption of such a regimen and mode of life as will promote health, as will decrease the morbid derangement while increasing the power of resistance and control.111

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111 Kerr, Inebriety or Narcomania, p. 17.
Kerr even tried to supply a physiological rationalization for long-term medical care, based on the assumption that weakened resistance and self-control might often be due to an organic lesion produced by the poison itself. He surmised that the damage done could be repaired simply through rest, proper nutrition, and removal of the temptation of alcohol: “There has been a degeneration of brain tissue, and time must be given for a new and ample supply of healthy brain and nerve substance.” More specifically, Kerr and his colleagues urged that in most cases a one- to three-year term in a retreat or reformatory would be sufficient time to cultivate the power of self-control and restore healthy nervous substance. In actual practice, medical therapy for wealthy drinkers consisted simply of withdrawal to a private retreat or a doctor’s quiet country home, where the patient could enjoy a healthy diet, exercise, and relaxation. On the other hand, the treatment provided for the poorer criminal drunkards convicted under the 1898 Inebriates Act more closely resembled that of a workhouse or prison than a hospital or retreat. Along with forced withdrawal from all access to alcohol, the reformatory regimen featured chiefly “prayers and piecework,” or in other words moral and religious exhortations fortified by labour in the fields, factory, or laundry.

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112 Kerr, “President’s Inaugural Address,” p. 10. A similar description of the disease concept and the need to allow time for healing of the “injury to cerebral tissue” was supplied by another treatment specialist, James Stewart, “Treatment of Inebriety in the Higher and Educated Classes,” Proceedings of the Society for the Study of Inebriety 19 (1889): 2-14.

In addition to its importance in shaping public policy on alcoholism treatment, the medicalization of inebriety also served to expand and legitimize the professional roles of alienists and other doctors who studied alcohol and drug abuse. By redefining the drink habit as a diseased condition rather than merely a vice—or at least by trying to cloak moral judgments about intemperance in the guise of medical-scientific theory—the inebriety doctors sought to gain medical jurisdiction over what had previously been considered a moral and legal issue that fell within the domain of the cleric, the social reformer, or the lawyer.\(^{114}\)

Specialized efforts to deal with the relatively small class of men and women labelled habitual drunkards were sometimes regarded as distinct from or even inimical to the broader temperance reformation. Presumably victims of the disease of inebriety could not be reclaimed through moral or rational persuasion, the principal methods of reform employed by most of Britain’s temperance societies.\(^{115}\) Some teetotalers even complained that the most

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\(^{114}\)This interpretation in terms of medical self-interests has also been advanced by Berridge, “Society for the Study of Addiction,” p. 999; as well as in Virginia Berridge and Griffith Edwards, \textit{Opium and the People: Opiate Use in Nineteenth-Century England} (New Haven: Yale UP, 1987), pp. 150-170. Kerr proposed another important social role for inebriety experts, namely providing testimony in court as to whether drunken offenders ought be considered criminally responsible for their actions. If the medical and family histories of such offenders indicated their drinking may have been due to mental disease, then they could not be held responsible by analogy with the insanity defence. Norman Kerr, “Inebriate Criminal Responsibility,” \textit{Proceedings of the Society for the Study of Inebriety} 16 (1888): 12-14; and “Recent Civil and Criminal Trials Complicated with Inebriety; the Need for a Reformed Jurisprudence and Amended Legislation,” \textit{Proceedings of the Society for the Study of Inebriety} 28 (1891): 1-28.

\(^{115}\)This was used as an argument in favour of the Inebriates Acts by for example Thomas Crothers, “Sanitary Relations of Inebriety,” \textit{Proceedings of the Society for the Study of Inebriety} 9 (1886): 1-7; and Peddie “Habitual Drunkards Act,” p. 13.
incorrigible drunks were to be sheltered and coddled by the new treatment professionals, rather than properly chastened for their sins.\textsuperscript{116} Moreover, the SSI's official stance appeared to be that drinking was a serious problem only in cases where mental disease was suspected to be the antecedent. In contrast, the rest of the anti-alcohol movement condemned alcohol use by all members of society, not just by a few individuals who were most severely afflicted with the drink impulse. The SSI's emphasis on institutional provisions for habitual drunkards seemed to avoid the root cause of all drink problems, namely the continued presence of the temptation itself. Some temperance doctors such as J. J. Ridge even insinuated that the goal of curing a few thousand inebriates was far easier and less noble than their own goal of universal prevention.\textsuperscript{117}

The SSI's programme for medicalizing the theory and treatment of chronic drunkenness was thus occasionally seen as conflicting with temperance strategies for reforming drink habits across the whole community. At the same time though, important similarities between the curative and preventive approaches can also be identified. The inebriety doctors and the members of the medical temperance movement both promoted their own unique roles as

\textsuperscript{116}American temperance reformers were perhaps even more belligerent towards the nascent inebriety movement, condemning its leaders for trying to "protect the sinful" and "dignify vice and apologize for crime." Wilkerson, "A History of the Concept of Alcoholism as a Disease," pp. 133-34 and 147.

\textsuperscript{117}Ridge accused the new inebriety specialists such as Kerr of advancing a false theory of drunkenness as disease and of using the "unnecessary" Habitual Drunkards Bill as a "salve to the consciences of those who cannot be unconcerned at the evils of intemperance, but are not prepared to apply the only thorough preventive—total abstinence. . . . It is far more convenient to say, 'Shut the drunkard up,' while you pour out another glass of wine." J. J. Ridge, "Habitual Drunkards Bill," \textit{Medical Temperance Journal} 10 (1879): 11-16.
scientific and medical experts in the campaign against alcohol problems. The two movements were also congruent in their call for more extensive scientific study of alcohol and alcoholism. For the Inebriety Society this meant hearing at its meetings not only reports of members' experiences with the treatment of alcoholism, but also papers on scientific topics such as the experimental and post-mortem study of alcoholic pathologies. But the most important connection between the two groups was their common set of assumptions about alcoholic heredity. As I will argue next, the disease concept of inebriety owed much to the degenerationist paradigm already identified as playing a prominent role in the British and French anti-alcohol and psychiatric literature. Moreover, it will be seen that temperance doctrines regarding the transmissible effects of parental alcoholism were also defended by many members of the SSI.

During the 1880s and 90s, most quarterly meetings of the SSI were dominated by discussions of the disease concept, therapeutic regimes, and the medical jurisprudence of inebriety. One key element relevant to all of these discussions was the question of the etiology of the drink habit, which was almost always presumed to include a hereditary component. Other papers published in the Society's Proceedings specifically addressed the question of heredity in reference to alcoholism. But it was Norman Kerr's extensive

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119 For example, Crothers, "Sanitary Relations of Inebriety;" Stewart, "Prevention of the Development of Inherited Inebriety;" and H. Ernest Trestrail, "Some of the Circumstances which favour the Development of Inebriety, and how to Meet Them," *Proceedings of the*
writings on the disease concept that most clearly delineated the various meanings of "inherited" inebriety in late-nineteenth-century medicine and social reform. First, Kerr noted the phenomenon of drunkards begetting drunkards, or in other words the transmission of the morbid impulse for intoxication from parent to child. He expressed sympathy for those offspring of inebriates who might otherwise be sound citizens, yet who would have to be advised to avoid alcohol entirely lest they fall victim to their "hereditary enemy." However, Kerr’s formulation of the disease concept was never limited to the simple transmission of the inebriate habit itself. He and other inebriety doctors also relied on assumptions about a hereditary diathesis and the transformation of heredity across the generations, assumptions which may have been related to the psychiatric theory of \(\text{dégénériscence}\).\(^{121}\)

According to Morel’s theory, a hereditary diathesis or innate nervous defect that gave rise to a tendency to alcoholism in one generation might have presented itself as other diseases such as insanity, epilepsy, and feeblemindedness in the parents or ancestors. Thus Kerr’s specific disease of inebriety could have been subsumed under the broader degenerationist theory, as just one of many possible manifestations of a defective condition of the nervous system. As Kerr explained the phenomenon of transformation of heredity:

\[\text{Society for the Study of Inebriety} 22 (1889): 1-7. \text{Many more papers on heredity were published after 1894; these will be discussed in the next section.}\]

\(^{120}\)Kerr, \textit{Inebriety or Narcomania}, p. 16.

\(^{121}\)Although Kerr’s theory clearly resembled Morel’s, the first SSI reference to the French alienist and his ideas on alcoholic degeneration was made a few years later by W. C. Sullivan, “Children of the Female Drunkard,” \textit{Proceedings of the Society for the Study of Inebriety} 63 (1900): 5.
The inherited neuropathic predisposition may be transmitted, transformed into a variety of neurotic forms, the special form of insanity, inebriety, paralysis, epilepsy, hysteria, spasmodic asthma, hay fever, or allied nerve inheritance being determined by a concurrence of conditions including the individual environment, and stretching back for generations.  

The disease concept of inebriety also mimicked Morel’s formulation in identifying alcohol consumption as the most likely starting point of degeneracy in a family line. Kerr presumed that the predisposition to inebriety and other mental diseases in one generation had been initiated by excessive drinking, overwork, poor nutrition, or disease in the ancestors.

At times Kerr also seemed to defend a true Lamarckian explanation for why the parent’s craving for drink was sometimes reproduced in the child. A weakness of the will power acquired by alcohol abuse could become fixed in the nervous organization and then transmitted to future generations: “after a time the damage to the central nerve tissue is assimilated by the system, thus modifying the constitution, which modification may be reproduced in posterity.” He proposed one final and more immediate origin of the “inherited drink-impulse,” namely the idea that offspring might be born susceptible to drink if they had suffered pre-natal poisoning from alcohol ingested by either parent. In one passage in his textbook on inebriety, he described a process by which “the brain and nerve

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122 Kerr, Inebriety or Narcomania, p. 36.


124 Kerr, Inebriety or Narcomania, p. 302. As will be seen next, statements such as this left Kerr open to criticisms that his ideas on inherited inebriety depended on outdated assumptions about the inheritance of acquired characters. According to Archdall Reid, Kerr and other SSI members believed that excessive drinking was an acquired habit that could somehow be passed on to offspring. In reality however this was only one of several theories of alcoholic heredity found in Kerr’s work, and it was certainly not as significant as his disease concept of inherited inebriety.
cells of the unborn child have been badly and improperly nourished during intra-uterine life," owing to maternal alcohol consumption. This same passage also suggested that alcohol might directly injure the germ plasm or embryo, especially when there was intoxication at the time of conception so that "the impregnated ovum is poisoned from the first."^125

The wide variety of beliefs held by SSI members as to what counted as alcoholic heredity were exposed again in 1899 when Archdall Reid began his scientific and polemical assaults on this particular facet of temperance science.126 The controversy generated by Reid's paper soon led to the creation of a special SSI Committee on Heredity.127 Although this Committee was originally assigned the task of studying the issue of the heritability of the disease of inebriety or the taste for drink, in fact parts of its 1901 report and most of the responses to it focused on the related questions of whether and how alcohol use might produce physical and mental defects in offspring.

The Committee on Heredity

In a remarkably insightful 1894 paper on the hereditary tendency to alcoholism and degeneration, an SSI member named Thomas Morton had urged his colleagues in the temperance and inebriety movements to pay closer attention to recent advances in the science of heredity. In particular Morton insisted that August Weismann's doctrine of the continuity

125Ibid., pp. 295-96.


of the germ plasm and non-inheritance of acquired characters "has to be reckoned with by those who wish to retain that most powerful argument for abstinence which is based upon the assumed transmission of the physical results of intemperance to generations yet unborn."\textsuperscript{128} Acknowledging that he was playing devil's advocate on behalf of the anti-alcohol movement, Morton warned that in order to convince a sceptical public that temperance reformers were not just "prejudiced enthusiasts" they had to demonstrate that all of their scientific teachings on alcohol were beyond reproach. "The time has come for reconsidering the assumptions on this subject which pass current among us, defining them more carefully, and attempting a positive demonstration of so much of them as can be proved."\textsuperscript{129}

Morton was one of the first British inebriety experts to distinguish explicitly between two types of transmissible consequences of parental drinking: "somatogenic" changes to the parent's body acquired through environmental conditions and "blastogenic" changes or induced variations in the germ plasm.\textsuperscript{130} But unlike Caleb Saleeby and other twentieth-century racial poison theorists who recognized this same distinction between Lamarckian heredity and blastophthoria, Morton at this time still wished to defend both theories of the action of alcohol on offspring. He thought that more careful statistical surveys might eventually prove that drunkards did indeed breed drunkards—that alcohol consumption by parents could produce in offspring a nervous instability expressed as a desire for drink. He


\textsuperscript{129}\textit{Ibid.}

\textsuperscript{130}\textit{Ibid.}, p. 6.
further recognized that proof of a true Lamarckian transmission of habitual intemperance required that there be no pre-existing hereditary neurosis in an alcoholic family. Morton’s precise and comprehensive discussion of alcoholic heredity ended by noting that Weismann’s claim for the complete seclusion of germ from soma had already been called into question by other scientific authorities, hence leaving open the possibility of both Lamarckian inheritance and direct injury to germ plasm by alcohol circulating in the parental body.

All of the SSI members who responded to Morton’s presentation at this meeting commended his critique of Weismann’s doctrine while reiterating orthodox medical and temperance views on hereditary taint and the need to preserve a healthy inheritance.131 This paper also inspired a rash of further articles in the Society’s Proceedings, which together expressed all of the viewpoints on drink and hereditary defect described in the previous section, although usually not in a very coherent fashion.132 The responses to Morton’s challenge showed that on the whole the SSI members continued to support not only Kerr’s theory of an inherited impulse for intoxication but also several poorly defined beliefs about Lamarckian and pre-natal effects of parental and ancestral intemperance. Only after the turn

131Ibid., pp. 9-14.

of the century and the 1901 report of the Committee on Heredity did inebriety and temperance doctors begin to take heed of Morton’s warning about founding anti-alcohol arguments on firmer scientific principles and to examine more carefully their conjectures about soft heredity.

Even more vigorous defences of soft hereditarian notions ensued from Archdall Reid’s provocative contributions to the SSJ starting in 1899. In a full-length monograph on the topic of alcoholism and heredity, Reid put forward his argument that far from being a source of deteriorating racial fitness alcohol in fact helped to foster progressive evolution by acting as a stringent selective agent.133 He began and ended his exposition with the assertion that alcoholism was a problem to be studied by the evolutionist, not by the philanthropist or the preacher whose history of coercive efforts to eradicate the social and medical ills associated with excessive alcohol use could now be judged a failure.134 In place of anti-alcohol legislation and education Reid proposed a radical social Darwinist solution to the national drink problem.

His argument was based upon the premise that habitual drunkenness, or more accurately the desire to obtain the pleasurable effects of intoxicating beverages, was an inborn trait. This hereditarian theory of alcoholism was intended to be distinct from the disease concept of


134Reid, Alcoholism, p. 2. As will be seen next, Reid’s insistence that temperance science was flawed and that only objective scientists armed with the facts of biology could guide effective social reform were themes echoed in the anti-temperance rhetoric of Karl Pearson’s eugenic school in 1910.
inebriety: Reid repudiated any possibility of Lamarckian origins of the craving for drink and he had no interest in the psychiatrist’s idea of the transmutation of heredity. He insisted that temperate and intemperate constitutions differed not in their capacity for self-control, as was assumed by the disease concept, but instead in their capacity to enjoy alcohol. His argument next noted that for obvious reasons those individuals who tended to find indulgence pleasurable were less likely to flourish or to have the opportunity to procreate. The poisonous action of alcohol was constantly weeding out heavy drinkers from the population or making them ineligible for marriage, thereby leaving only those who were not susceptible to the temptation to perpetuate the race. In this fashion a “racial tolerance” for alcohol was gradually built up in populations or nations where drink was readily available. Reid did however concede that even though in the past human evolution had necessarily proceeded by means of such a brutal survival of the fittest, in modern societies biological susceptibility to alcoholism and infectious diseases could instead be bred out through the more humane means of artificial selection.135

Reid’s selectionist theory was taken seriously by only a few of his colleagues in the SSI. The most notable of these was Dr. Harry Campbell, who later served several years as the Society’s president.136 He was probably sympathetic to certain elements of Reid’s view of hereditary inebriety owing to their similarity to his own views on the biological proclivity to

135Ibid., pp. 86-88 and 167-70.

intoxication. Campbell's theory attempted to account for the physical desire for alcohol and other stimulants in rather vague chemical and physiological terms: whereas in a healthy body hormones circulating in the blood functioned to stimulate the brain, the absence of these hormones in the abnormal event of sickness, exhaustion, or mental depression caused the brain to crave substitute sources of stimulation. Reid's only other acknowledged ally at this time was Dr. H. Laing Gordon, a fellow SSI Council member who praised him for having "raised the study of alcoholism from the fogs of haphazard science to the clear air of sound science." Gordon presumed that temperance reform and negative eugenics could work together to free mankind from the curse of inebriety. The most radical and controversial component of Reid's theory, the idea of alcoholic selection, did not however garner any substantial support until the 1920s, when it was revived by several American alcohol researchers affiliated with the "wet" side in the prohibition debate.


139 Research carried out independently by the American biologists Charles Stockard and Raymond Pearl had led to the surprising finding that the descendants of alcoholized guinea pigs and fowl were generally more fit than those of the unalcoholized control groups. Both workers interpreted the racial effects of alcohol in terms of pre-natal selection against defective embryos. During the 1920s, this theory replaced the racial poisoning explanation of the deleterious effects of alcohol on offspring. Raymond Pearl, "The Experimental Modification of Germ Cells," Journal of Experimental Zoology 22 (1917): 125-85 and 241-310; and Charles Stockard, "Latest Scientific Investigation in America of the Action of Alcohol," in Proceedings of the Fifteenth International Congress against Alcoholism (Washington, 1920), pp. 369-81. Stockard had previously interpreted his results as supporting the racial poison theory of degeneracy, but he shocked the temperance world by suddenly shifting to the "wet" alcoholic selection argument in this 1920 presentation. See
The majority of Archdall Reid’s contemporaries in the inebriety and temperance movements were vehemently opposed to his radical perspective on evolution, heredity, and alcoholism. For instance the pathologist G. Sims Woodhead, at this time a vice-president of the SSI and president of the British Medical Temperance Association, rejected Reid’s basic notion of an inheritable “taste for alcohol.” Instead he reiterated the central tenet of the disease concept of inebriety, the idea of an inherited nervous degeneracy that left the individual prone to alcohol abuse. Woodhead further admonished Reid for suggesting that the only way to wipe out disease, whether it be alcoholism or typhus, was by eliminating its victims. More ethical means of temperance reform focused on saving the drunkard and ensuring the well-being of the current population, rather than sacrificing these for “any future problematic advantages.”¹⁴⁰ Norman Kerr likewise initiated a Society dialogue on Reid’s alcoholic selection argument as early as 1898. Most of the participants agreed with him that it would be both morally and practically misguided to follow Reid’s advice and abandon existing efforts for the prevention and cure of drunkenness. Civilized society surely would not permit individual drinkers to destroy themselves for the sake of future racial health: as Kerr asserted, “we have no right to promote the physical, mental and moral degradation of existing humankind, in the alleged interest of far-off successors in life.”¹⁴¹ Reid’s eugenic


plan to forbid drunkards from reproducing their kind was also disparaged as an “impossible and futile task, compared to which the abstinence and prohibition propaganda would be but child’s play.”142

Members of the SSI thus took offense mainly at Reid’s unprovoked assaults on “the magnificent Temperance Movement,” which they credited with having already saved “over a quarter of a million of human souls . . . from the degrading thraldom of inebriety, and transformed [them] into sober, industrious, law-abiding citizens.”143 According to Reid, on the other hand, not only had campaigns to persuade or legislate people into sobriety already proved unsuccessful, but more importantly his theory implied that the removal of all intoxicating beverages from the environment would only result in a worsening of the drink problem in the long run. Although rescuing the drunkards of today was certainly a worthy and noble cause, the Darwinian theory suggested that it would not be possible “to promote temperance by preserving the pre-disposed to intemperance.”144 Without alcohol there would be no selective pressure against inebriety, and those born with the tendency to drunkenness would be able to survive and procreate, thereby lowering the resistance of the populace as a whole. If later generations of such a population were to be reintroduced to alcohol, an

“Would it be wise to confirm and intensify the long chain of alcoholic poisoning, with all its tremendous train of preventible premature death, disease, agony untold, and waste down the generations, for such an ultimate acquirement as a prospective vista of persons and nations immune to alcoholic empoisonment?”

142Ibid., p. 13.

143Ibid., pp. 1-2.

144Reid, Alcoholism, p. 166.
excessive number of individuals born with the alcoholic diathesis would now fall prey to the temptation.

Reid attempted to substantiate this prognosis with some rather dubious historical evidence about the evolution of various national and ethnic groups relative to their drinking habits. He thought this evidence was sufficient to demonstrate that every existing race "is temperate strictly in proportion to its past sufferings with alcohol."145 For example, he pronounced southern European nations with thousands of years of wine drinking behind them to be today the most sober, followed by northern Europeans who had had a shorter history of brewing and distilling. The races most notoriously susceptible to drunkenness were those "savages" only recently introduced to alcohol. Whereas groups such as the Jews and the Anglo-Saxons had supposedly become less drunken over the course of centuries or millennia of experience with alcohol, native races throughout the world were doomed to be conquered by stronger nations and perhaps even go extinct owing to their recent exposure to alcohol and infectious diseases against which they had no natural resistance.146

Much like his contemporary Saleeby, Reid was specially interested in the study of human evolution and heredity.147 The subject of alcoholism interested him because of its relevance to the more profound issues of human progress and the decay of races. Reid never addressed the individual miseries caused by intemperance but instead focused on its long-

145 Ibid., pp. 96-98.

146 On the other side of the coin, the successful imperialist expansion of the Anglo-Saxon race was attributed to its greater resistance to disease. Ibid., pp. 43-50.

term racial significance. His selectionist theory argued not only that drinking itself was harmless for offspring and the race, but also that the temperance crusade and other environmentalist reforms could only aggravate the problem of racial decay by enabling the propagation of hereditary weaknesses such as the inborn desire for drink. Reid in fact joined the Eugenics Education Society shortly after its founding, and with his hard hereditarian, social Darwinist convictions he was one of the few British eugenists who closely matched the “better-dead” stereotype.

Reid was also interested in applying the science of heredity to solving social problems such as alcoholism. As a disciple of Weismann, he definitively rejected the doctrine of inheritance of acquired characters and even seemed sceptical about the notion that environmental factors such as alcohol could directly alter the germ plasm. He thus stated that the crucial error underlying the temperance programme was the belief that “parental drinking renders offspring more prone to drunkenness than they would otherwise be.” In other words, he denied the assertion made by Lamarckians such as his main SSI foe Kerr that an acquired drink habit could be passed on to offspring:

Dr. Kerr says the children drink because their parents drank. I deny this and declare [that] the children drink . . . because they inherit, just as they do arms and legs, that inborn constitution of mind which rendered drinking delightful to the parent.

Reid noted that given the doctrine of the continuity of the germ plasm, there could be no possible mechanism of Lamarckian heredity. Moreover, years of investigation had never

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148 Reid, Alcoholism, p. 160.

found a “single indisputable instance of the transmission of an acquired peculiarity.” His scepticism towards notions of soft heredity also seemed to owe as much to common sense arguments as to biological theories such as Weismann's. If in fact the tendency to drink were cumulative through the generations, or if parental alcoholism produced filial degeneration, then surely the British race would have drunk itself to extinction by now. Given true Lamarckian inheritance, the fitness of the population would “drift helplessly” with every environmental change encountered.

In his polemical tracts against the temperance campaign, Reid consistently exaggerated the significance of the Lamarckian version of alcoholic heredity. He painted an oversimplified picture of the inheritance of an acquired drink impulse as the sole scientific foundation for the anti-alcohol movement: “if Lamarck is right, temperance reformers of the dominant school are also right; but if Lamarck is wrong, then they are also wrong, and temperance reform, as at present conducted, is nothing other than a monstrous mistake.” In responding to his critics in the SSI, Reid willfully ignored their references to other possible relationships between inebriety and heredity, including blastophthoria and intra-uterine injury to offspring. While Reid was certainly justified in reproaching these writers for their rather imprecise use of the term heredity and their inability to distinguish between Lamarckism and germ poisoning, he himself did little to clarify these issues. He never expressly addressed the

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152Reid, “The Temperance Fallacy,” p. 4.
possibility that through pre-natal physiological mechanisms parental indulgence might lead to any number of mental and physical defects in offspring. On at least one occasion he acknowledged that germ plasm, ovum, or embryo could in theory be altered by the condition of the parent, but he never bothered to pursue how this idea related to existing notions of alcoholic degeneration:

It is not denied by any one that changes in the soma may so influence the germs, may so change them, that the organisms into which they subsequently proliferate will be changed also. What is denied is that changes in the soma can affect the germs in such a particular manner as to cause them, after proliferation, to reproduce, as inborn characters, the peculiarities the parent acquired.  

Reid was always too preoccupied with the specific issue of inheritance of acquired somatic modifications to engage in debate over other types of alcoholic heredity, even though they were much more frequently cited by temperance supporters and medical authorities.

Because most SSI members tended to be rather unclear about the meaning and mechanisms of alcoholic heredity, they were unprepared to respond appropriately to Reid’s and Morton’s challenges to the idea of inheritance of acquired alcoholism or alcoholic pathologies. Instead of simply acknowledging that the Lamarckian theory was becoming increasingly unfashionable, they continued trying to defend it by citing clinical experience, pedigree studies, and even questionable cytological research.  

Writers such as Kerr failed to

\[153\text{Ibid., p. 7.}\]

\[154\text{Another SSI member who responded to Reid was the asylum pathologist W. Ford Robertson. This writer defended the validity of inheritance of acquired characters by referring to some very confusing recent research on the origins of germ cells, which he seemed to interpret as showing that alcohol or other conditions of life could somehow produce adaptive variations in the hereditary material. Both Reid and Campbell ventured to respond to this theory, but both were understandably perplexed by Robertson’s claims. W.}\]
call attention to the fact that they believed parental drinking could pose a threat to offspring even without any transmission of somatic modifications, thus permitting Reid and his camp to focus their counterattacks on the Lamarckian issue alone. Several years later the SSI member W. C. Sullivan spelled out clearly what the real issues had been in this debate with Reid, namely the distinction between Lamarckism and germ poisoning:

The reality of the influence of parental intoxication has been occasionally called in question on a priori grounds by some extremists of the school which repudiates the transmission of acquired characters. It is, however, perfectly obvious that a doctrinal objection of this sort is quite irrelevant; the effects attributed to parental alcoholism are not in the category of transmitted acquirements at all; they are the results, expressed in defect and deviation of development, of a deleterious influence exerted on the germ cells.\(^{155}\)

This whole controversy over Lamarckian assumptions in the medical temperance and inebriety movements soon led to the convening of the Society’s Committee on Heredity. Thomas Morton moved for the formation of this Committee in July 1899, although without defining a clear mandate for it.\(^{156}\) While the SSI had resolved rather broadly to “consider the relation of Heredity to Inebriety,” the final report of the Committee stated that its goal had been “to investigate the conditions under which the tendency to inebriety is capable of

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\(^{156}\)The Committee members were Morton, Reid, Harry Campbell, Wynn Westcott, Laing Gordon, Heywood Smith, Sims Woodhead, W. Francis Hazel, W. H. Kesteven, G. K. Poole, Aydon Smith, Lauzun Brown, Henry Raynor, and Victor Horsley. The last three soon retired and were replaced by A. E. J. Longhurst and W. C. Sullivan.
transmission to offspring." 157 The Committee in fact considered two distinct questions: first whether an inherited craving for drink had any Lamarckian component, and second whether ante-natal parental indulgence could produce degeneracy in offspring. They appealed to the medical profession and the public for data and opinions on both of these topics, but this method of research generated little response. Consequently the 1901 final report consisted of little more than a summary of the individual opinions of the Committee members. Indicative of the amount of dissent and confusion that still existed on the topic of alcoholic heredity, the report was actually signed by only nine of the thirteen members, while most of the others added comments on particular disputed points.

The report of the Committee on Heredity was evidently composed principally by Archdall Reid, since it incorporated many of his most controversial views into its four short pages of main text. It opened by confirming Reid's notion of an "inborn capacity for enjoying alcohol," which most of the signatories likely perceived as consistent with the disease concept of inebriety. 158 The next paragraphs of the report forcefully rejected the idea that "characters acquired by the parent through indulgence in drink are inherited by the children subsequently born." Only Dr. Longhurst still insisted that acquired characters could be heritable. 159 The Committee could not however speak with as much certainty on other possible versions of alcoholic heredity or pre-natal damage to offspring. Obviously these


158 Morton refused to sign this part of the report, while Dr. Longhurst and Surgeon-General Poole attached dissenting comments asserting that the role of heredity in the etiology of habitual inebriety had been greatly exaggerated. Ibid., pp. 5-6.

159 Ibid., pp. 2 and 5.
issues were of concern to at least some of the participants, who managed to include in the report the following ambivalent defence of what would later be called the racial poison theory of alcohol:

They admit as possible, though strictly speaking this is no question of the inheritance of an acquirement, that indulgence may so damage the parental tissues that the germ is ill-nourished, and the child is thus affected; yet again they admit as possible that the alcohol circulating in the parent’s blood may directly affect the germ, and in this manner affect the offspring, as by producing degeneracy. But these speculations have not been strongly supported by any evidence tendered to the Committee.\(^{160}\)

The remainder of the report reiterated and endorsed Reid’s theory that alcohol acted to promote racial evolution rather than degeneration. Once again however dissenting opinions about this theory and the historical evidence for it were expressed in the additional comments. Professor Woodhead for example acknowledged that the selectionist theory might “form a basis for further research,” but that it still touched on only a small part of the question of alcoholic heredity.\(^{161}\) Finally, a few sentences at the very end of the report again addressed the question of other deleterious effects of parental and especially maternal intemperance on offspring. But this time these concerns were deemed irrelevant to the Committee’s specific interest in the heritability of the condition called inebriety:

The offspring of women intemperate during their pregnancies are not included in the foregoing conclusions. There is some evidence that fetuses and embryos are injured by maternal inebriety; but here again the Committee has no conclusive evidence that this injury takes such a form that in subsequent life the children

\(^{160}\text{Ibid., pp. 2-3.}\)

\(^{161}\text{Ibid., p. 5. Similarly Longhurst, Poole, and Gordon objected that not enough was known about changes in the drinking habits of various races of man to support the claim that those longest exposed to alcohol had evolved to be most temperate.}\)
have a special predisposition to inebriety.\textsuperscript{162}

Even though the bulk of the final report closely followed Reid’s argument for hereditary inebriety and alcoholic selection, he himself attached a long disclaimer objecting to each sentence that diverged from his theory. He was particularly bitter about even the minor compromises made to conventional views on alcohol and degeneration. Whereas the report stated that the idea of germinal poisoning was not “strongly” supported by any evidence, Reid countered that “overwhelming evidence” indicated that such degeneracy did not in fact accumulate over generations exposed to alcohol pre-natally. He regretted that given the opportunity to dispel certain beliefs about parental alcoholism as “mere superstitions,” the Committee had in the end failed “to deliver its message clearly and emphatically.”\textsuperscript{163}

On the other hand, Committee members Morton, Woodhead, and W. H. Kesteven felt that the report had not gone far enough in addressing the question of degeneracy in offspring, even though as Morton noted this “would have come well within the scope of the enquiry.”\textsuperscript{164} In a preliminary report on the Committee’s work, Woodhead had likewise stated that its primary goal was to address the one question of burning importance to the temperance movement: could parental drunkenness in any fashion harm children?\textsuperscript{165} Kesteven went so far as to submit a separate report that ignored Reid’s theory altogether. This writer emphasized instead the disease concept of inebriety as deficient power of self-control, along

\textsuperscript{162}Ibid., pp. 4-5.

\textsuperscript{163}Ibid., pp. 7-8.

\textsuperscript{164}Ibid., p. 9.

with his speculations on how various forms of mental disease, including inebriety itself, sometimes resulted from damage to the germinal tissues caused by alcohol.\textsuperscript{166}

To sum up this section, then, the SSI's Committee on Heredity was assigned the task of studying the relation of heredity to inebriety, concluding in favour of an inborn tendency to excessive indulgence but against any Lamarckian transmission of such a tendency. Although not technically included in the Committee's mandate, the final report also touched on a related subject that had often come up at recent Society meetings: the appearance of mental and physical degeneracy in children exposed to alcohol pre-natally. The relationship between alcohol and heredity was considered relevant to the disease concept of inebriety, especially by treatment specialists such as Kerr who were interested in demonstrating the hereditary etiology of the disease.\textsuperscript{167} Theories of hereditary alcoholic degeneration were also defended by SSI members who were affiliated with the temperance campaign, such as Thomas Morton, G. Sims Woodhead, Arthur Longhurst, Heywood Smith, and Norman Kerr.\textsuperscript{168} These authors


\textsuperscript{167}SSI papers on the topic of heredity were given by several doctors identified as inebriety treatment specialists who worked either in private practice or at private retreats, including Heywood Smith, W. H. Kesteven, A. M. Holmes, and the Canadian Stephen Lett. These writers mainly cited case histories of inherited alcoholism and of injuries suffered by the children of drinkers.

\textsuperscript{168}On the other hand, a later SSI response to Reid's theory took the opposite tack and completely denied the importance of heredity to the temperance cause. The temperance doctor Frederic Coley argued that most individuals developed the craving for drink owing to the low moral standards of their parents, social customs, and existing temptation, not to any hereditary or congenital factor as Reid claimed. Coley agreed with Reid's rejection of the idea of a Lamarckian transmission of alcoholic habits, but called into question his further assertion that parental alcoholism could not in any way affect the offspring subsequently born: "\textit{a priori} it is excessively unlikely that a disease, or a toxic agent, which affects the whole body, including of course the reproductive organs, should have no effect at all upon
were keen to ensure that the anti-alcohol platform was based upon sound scientific principles and hence they called for further research into the vexed question of heredity, especially regarding assumptions about the inheritance of acquired alcoholic habits and pathologies. Their warnings would indeed be taken seriously after the turn of the century, when the marginalized Lamarckian theory was mostly expunged from discourses on alcoholism and replaced with the idea of pre- and post-natal effects of alcohol use on offspring.

Inebriety specialists, hereditarian psychiatrists, and temperance doctors thus represented the reigning authorities in the arena of late-Victorian alcohol science. I have tried to suggest in this chapter that all three of these groups utilized theories of hereditary alcoholism and alcoholic degeneration in their struggles to establish their professional expertise in particular areas of medical practice and social reform. Researchers associated with the temperance movement were also largely responsible for forging consensus on alcohol and heredity by means of the medical-scientific findings they generated in the laboratory, clinic, and social survey. These studies indicated almost unanimously that parental drinking could produce morbid heredity and congenital defects in offspring. As a general rule, physicians in the temperance campaign were the only medical personnel sufficiently interested in alcohol

the germ cells.” But even this theoretical ante-natal action was deemed to “have very slight practical bearing upon the problem of temperance reform.” This opinion was atypical of the SSI and temperance doctors. Frederic C. Coley, “Some Points in the Etiology of Inebriety,” British Journal of Inebriety 2 (1904): 28-29.

169William Bynum asserts that between 1860 and 1910 all of the available scientific data supported the notion that mental and physical abnormalities in offspring often resulted from high or even moderate levels of parental alcohol consumption. Bynum, “Alcoholism and Degeneration,” p. 63.
problems to devote their efforts to serious investigations on this topic. Whereas in the United States in the 1890s a competing group of scientists not affiliated with the temperance movement had asserted its authority over the field of alcohol research, no equivalent challenge to temperance science was posed from within the British medical and scientific communities until the First World War.170

Prevailing notions of alcoholic degeneration were next carried over into early-twentieth-century discourses on public health and racial fitness, especially within such forums as the infant welfare campaign, the Eugenics Education Society, and the Society for the Study of Inebriety. Thus it was still possible for experts in the alcohol field to proclaim as late as 1910 that there was “almost universal acceptance of the belief that the sin of alcoholic indulgence by the parents is visited upon the children unto the third and fourth generation.”171 The Edwardian period was unique however in that for the first time the

170 British research on alcohol that for the first time challenged teetotal principles was produced in the wake of the government’s successful new moderationist liquor control measures, introduced in 1915 under the Defence of the Realm Act. This scientific work was summarized in a text published by the Central Control Board (Liquor Traffic) Advisory Committee, Alcohol: Its Action on the Human Organism (London: HMSO, 1918). By contrast in America as early as the 1890s, a group calling themselves the “Committee of Fifty” had presented their new objective physiological research on alcohol as an alternative to biased scientific temperance teachings. Led by the chemist Wilbur Atwater, these American scientists favoured findings that seemed to sanction moderate alcohol consumption as safe and even useful to the body. Two recent articles have described the Committee of Fifty’s efforts to displace lay temperance writers as the ultimate authorities on the medical-scientific aspects of the alcohol question: Philip Pauly, “The Struggle for Ignorance about Alcohol: American Physiologists, Wilbur Olin Atwater, and the Woman’s Christian Temperance Union,” Bulletin of the History of Medicine 64 (1990): 366-92; and Jonathan Zimmerman, “‘When the Doctors Disagree’: Scientific Temperance and Scientific Authority, 1891-1906,” Journal of the History of Medicine and Allied Sciences 48 (1993): 171-97.

medical profession as a whole was forced to acknowledge alcoholism, drunkenness, and especially female drinking habits as serious obstacles to individual and community health. As Anthony Wohl has similarly noted in his history of British public health, "it was not until the end of the century, when concern mounted for England's international position and the supposed physical deterioration of her population, that closer attention was paid by authorities to the connection between drink and ill-health."172

Alcohol came to hold such a prominent position on Edwardian social reform agendas owing mainly to the lobbying efforts of the still influential anti-alcohol crusade. It will therefore be worthwhile to review briefly the activities of the medical temperance movement during the first decade of the new century. By fueling escalating anxieties about alcohol as a menace to the welfare of current and future generations, temperance activists managed to exercise a stronger influence over public health and social policy making than ever before. As mentioned earlier, a group of anti-alcohol doctors affiliated with the SSI and the National Temperance League (NTL) had presented compelling evidence on alcohol to the 1904 Physical Deterioration Committee, outlining its malevolent effects upon succeeding generations. Some of these same men later joined the social investigator George Sims in spearheading the campaign against maternal drinking and the practice of bringing children into the public house, which culminated in the 1908 Children Act.173 The temperance


173The temperance movement's contributions to both of these campaigns has been discussed by David Gutzke, "'The Cry of the Children': The Edwardian Medical Campaign Against Maternal Drinking," British Journal of Addiction 79 (1984): 71-84.
movement was especially successful in its efforts to convince the medical profession as a whole to throw its support behind the introduction of scientific temperance and hygiene teaching into the elementary school curriculum. In 1904, under pressure from the prominent temperance surgeon Victor Horsley, the British Medical Association passed a resolution advocating such instruction as a valuable public health measure. Almost half of the nation's registered doctors also signed a petition to that effect addressed to the Board of Education. The outcome of this campaign was the production in 1909 of an optional temperance and hygiene syllabus that presented some of the more basic medical-scientific evidence regarding the physical and social evils caused by abuse of stimulants.\footnote{Ibid., pp. 75-76; E. Claude Taylor, “The Teaching of Temperance”, in T. N. Kelynack, ed., The Drink Problem (London: Methuen, 1907), pp. 211-28; Board of Education, Syllabus of Lessons on “Temperance” for Scholars Attending Public Elementary Schools (London: HMSO, 1909).}

Members of the SSI and NTL were thus especially instrumental in furthering the medical temperance strategy for changing national drink habits by means of emphasizing scientific education in the effects of alcohol abuse. This strategy was based upon the expectation that simply informing people of the medical-scientific facts about alcohol would encourage them to stay sober for the sake of their own health and that of their children. As one temperance advocate put the argument, temperance societies, school boards, and local health authorities could all contribute to “providing such adequate instruction and judicious persuasion as shall secure to each individual the preventive forces of accurate knowledge and moral incentive.”\footnote{Taylor, “Teaching of Temperance,” p. 211.} Instruction of school children was intended to protect younger
generations and their future offspring from the ravages of alcohol. Likewise information was disseminated to young mothers through the infant welfare centres and by means of pamphlets and posters. Such posters were utilized during the first decade of the century by public health authorities who mounted a concerted effort to alert parents of all classes to expert medical opinion on how intemperance could cause weakness, mental disease, or death in offspring.\textsuperscript{176}

Such “rational suasionist” approaches to temperance reform had grown increasingly important to late-Victorian and Edwardian anti-alcohol crusaders, as they lost faith in their ability to pass sufficiently stringent legal restrictions on the liquor trade. Decades of frustration on the political front had no doubt led to a certain disenchantment with the legislative approach, although admittedly the temperance movement nearly managed to push through a satisfactory liquor licensing bill in 1908.\textsuperscript{177} One especially popular alternative to


\textsuperscript{177}By the 1880s and 90s, most proposed anti-alcohol legislation had focused on giving local communities the opportunity to reduce their total number of liquor licenses. Such legislation had repeatedly failed to pass, however, owing to the reluctance of temperance forces to accede to demands that monetary compensation be provided to pub owners who would lose their licenses. The same controversy carried over into the twentieth century. The 1896-99 Royal Commission on Liquor Licensing Law (the Peel Commission) had recommended legislating for a large reduction in the numbers of licensed premises but with compensation for owners. A bill to this effect passed in 1905, much to the dissatisfaction of most branches of the temperance movement who opposed the compensation clause. In 1908, temperance hopes were revived again when the Liberal government introduced a bill that would force obligatory reductions in the numbers of licenses, eventually eliminate compensation, and even allow local prohibition. However, this bill was defeated in the House of Lords, leaving the minimally effective 1905 Licensing Act as the only legal means of controlling the liquor trade until the start of the First World War. Gwyliamor Prys Williams and George Thompson Blake, \textit{Drink in Great Britain, 1900 to 1979} (London: B. Edsall, 1980), pp. 6-36.
failed legislative remedies was the introduction of scientific and public health education on alcohol. An emphasis on scientific enlightenment was sometimes even promoted as more effective than the traditional moral suasionist approach. For instance, the report of the Physical Deterioration Committee had recommended that the alcohol problem could best be combatted by means of "the systematic, practical training of teachers to enable them to give rational instruction in schools on the laws of health, including the demonstration of the physical evils caused by drinking," rather than by means of "expatiating on the moral wickedness of drinking."\textsuperscript{178}

As was true of their Victorian predecessors, early-twentieth-century temperance doctors as a group tended to privilege rational persuasion and personal abstinence over any compulsory means of regulating the sale or consumption of alcoholic beverages. Among the medical men and women who continued to practice teetotalism or lend their voices to the temperance cause were numerous prominent members of the Society for the Study of Inebriety.\textsuperscript{179} Some of these physicians appear as important characters in my story of the history of ideas about alcohol and heredity, for having championed theories of alcoholic degeneration in the name of eugenics, infant welfare, and temperance reform. The fact that early-century concerns about parental alcoholism were often informed by temperance

\textsuperscript{178}Physical Deterioration Report, vol. 1, p. 87.

\textsuperscript{179}These included, to name just a few, Caleb Saleeby, Mary Scharlieb, J. W. Ballantyne, Victor Horsley, Alfred Pearce Gould, Theodore Hyslop, Theophilus Kelynack, Robert Jones, William McAdam Eccles, C. R. Drysdale, and James Lindsay. The Standard Encyclopedia lists these and other SSI members as having been active in temperance societies and given temperance lectures; many also belonged to the British Medical Temperance Association.
commitments was likewise displayed in the 1910-11 controversy over Karl Pearson’s alcohol research. Most of Pearson’s principal opponents were notable defenders of the anti-alcohol cause, including the member of parliament Thomas Whittaker, the surgeon Victor Horsley, and the eugenist Caleb Saleeby. When Pearson and his collaborators attacked the widely popular belief that parental drinking could injure offspring, these critics felt compelled to fight back owing to their commitments to both the temperance movement and the cause of race betterment.
III

THE CONTROVERSY OVER THE BIOMETRICIANS’ STUDY OF ALCOHOLISM AND OFFSPRING

1. Alcoholic Heredity and Hereditary Alcoholism

Discourses on the effects of alcohol upon offspring and the race generated by the group of doctors described in the first chapter represented not only a crucial component of temperance science, but also an alternative version of eugenics which rivaled the mainline model in Britain until around the start of the First World War. My focus on widely popular medical and lay beliefs about how parental alcoholism might injure offspring demonstrates that the scientific underpinnings and policy proposals of the British eugenics movement were not nearly as homogeneous as implied by the received view fashioned by historians such as Daniel Kevles, Geoffrey Searle, and Dorothy Porter. A number of Eugenics Education Society (EES) members maintained alternative “Lamarckian” views on heredity, views which they shared with environmentalist reformers such as those striving to eliminate the problems of drunkenness and infant mortality. These eugenists did not join the raging debate between Mendelians and biometricians or attempt to reconcile their assumptions about soft heredity with these modern biological theories. Non-mainline writers defined eugenics and racial health rather more broadly than did their better-known mainline colleagues, in order to incorporate a wider variety of factors that might impact on the physical or mental health of the next generation.
Caleb Saleeb y's Preventive Eugenics

The medical eugenists I focus on here made use of various notions about how the environmental factor alcohol might produce hereditary, congenital, or post-natal defects in offspring. These ideas came to be subsumed under the “racial poison” theory of the action of alcohol, thanks to the propagandist efforts of the eugenist Caleb Saleeb y. Saleeb y and many of his EES colleagues asserted that public health measures aimed at preventing parents and children from being exposed to this poison would help to arrest any further decay in racial vitality. Their favoured solution to the problem of alcoholic race degeneration was the enlightenment of prospective parents and school children on the advantages of total abstinence. Some writers also recommended the negative eugenic measure of marriage restrictions on habitual drinkers, recognizing that denial of a marriage license would only have to be a temporary situation for any individuals who sought treatment for their addiction and achieved a clean bill of health. Most supporters of Lamarckian eugenics and the racial poison theory were willing to allow that negative eugenics still had a valid role to play in improving hereditary fitness by eliminating stocks already tainted. But they nevertheless presumed that preventive programmes such as anti-alcohol reform would eventually obviate the need to curb the fertility of degenerate stocks, once the environmental roots of hereditary degeneracy had been eradicated.

It might be assumed that Lamarckian and pseudo-Lamarckian theories of heredity, which suggested that deleterious environmental conditions could harm not only the people exposed to them but also their descendants, would most readily lend themselves to pessimistic interpretations of human evolution. On the contrary though, British medical
eugenists tended to interpret Lamarckism as a relatively hopeful doctrine. Admittedly they were not as optimistic as for example their Brazilian counterparts, some of whom believed that the improved stature and fitness of children raised in a more sanitary environment could be transmitted in a Lamarckian fashion to the next generation. Nevertheless, the belief that heredity was malleable suggested to some British eugenists the possibility of a milder or more benevolent form of eugenics that would rely on less extreme measures than the permanent segregation of the unfit. They proposed that hereditary fitness might be raised more humanely and efficiently by curing acquired diseases, reforming immoral behaviours, and educating mothers. Because it sought to protect unblemished stocks from external causes of hereditary degeneration, preventive eugenics was even promoted as the “most urgent, useful and feasible” department of eugenics. All of these points in its favour were put forward most vigorously by Caleb Saleeby, the leading proponent of the alternative Lamarckian style of eugenics in Great Britain.

Saleeby devoted most of his attention to parental alcoholism as an environmental source of ill health and poor physique in subsequent generations of the race. In his scheme the primary mechanism by which alcohol might exert its pathological effects to the second generation and perhaps beyond was blastophthoric lesions to the parental germ plasm. However, Saleeby even went so far as to incorporate elements that had nothing at all to do with hereditary transmission into his alternative style of eugenics. He called for the “protection of parenthood” from environmental influences that might adversely affect not

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only germ plasm but also unborn offspring. In particular, he urged that the proper care and nutrition of both mother and unborn child were essential to the production of fit offspring.\(^2\) Saleeby even suggested that measures which would promote racial health by ensuring the well-being of the child \textit{after} its birth should be introduced into the domain of the eugenist. On this point he consistently emphasized "maternal environment," or in other words the quality of care and moral upbringing provided by mothers to the children under their supervision.

Saleeby’s definition of eugenics was therefore broad enough to include all imaginable situations in which “the race as represented by the next generation is injured through injury or infection of the present.”\(^3\) Moreover, his public health oriented “preventive” and “nurtural” branches of eugenics closely fit the pattern we have seen established by French and Brazilian eugenicists. In fact Saleeby’s texts were sometimes cited in foreign eugenics discourses during the 1910s and 20s, likely influencing the dominant styles of eugenics in for example Brazil and South America. Among British eugenicists Saleeby was the most fervent promoter of drink control policies and other public health reforms as the principal methods of ameliorating racial fitness. He was a member of several temperance and international prohibitionist organizations, yet he always insisted in his eugenic writings that his primary allegiance was to the cause of “race culture.” He considered temperance reform to be but one important method of accomplishing the even greater goal of bettering the overall fitness of


the human race, and in fact he criticized temperance literature for too often neglecting the eugenic aspect of the alcohol problem. At one point he protested that with its “appalling record of failure” the temperance movement was itself in dire need of reform. Its previous preoccupations with unpopular policies such as teetotalism and relatively trivial issues such as compensation for drink sellers should give way to the issue at the heart of the entire national drink problem, namely the prevention of procreation by drunkards.4

Many of Saleeby’s colleagues in the temperance and infant welfare movements promulgated ideas about the effects of parental alcoholism that were identical to his racial poison theory, although they did not necessarily express these in eugenic language. Some of these activists may have taken special interest in the study of the heredity and pathology of alcoholism owing to their principal dedication to the temperance cause. Others addressed the drink problem from a public health perspective, as one among many potential menaces to the health of the community or the welfare of infants and children. They may even have chosen to join the Eugenics Society because they believed that organization’s social reform objectives to be compatible with their own preferred meliorist programmes. Whatever their

4Caleb Saleeby, Parenthood and Race Culture: An Outline of Eugenics (1909; New York: Moffat, Yard, 1916), pp. 270-74. I have found no evidence that Saleeby himself was a teetotaler, nor did he give any indication in his writings about whether he thought complete abstention from alcohol was necessary to protect parents and children from its pathological effects. He did however frequently cite a few experimental studies showing that even small doses could injure offspring. He almost never referred to legislative approaches to the drink problem, speaking out instead in favour of scientific teaching and propaganda. In one 1911 text he expressed doubts about the efficacy of social reform through coercive means, including efforts to restrict access to alcohol, regulate prostitution, and prohibit female employment in lead factories. By the early 1920s, however, he had become a public supporter of American prohibition. Saleeby, Methods of Race-Regeneration (London: Cassell, 1911), p. 57.
priorities, many workers active in a number of Edwardian reform movements shared Saleeby's specific concerns about alcohol as a cause of infant deaths and progressive hereditary degeneration of the race.

In fact versions of the racial poison theory enjoyed almost universal acceptance among medical professionals and social activists investigating the alcohol question prior to the First World War. A nearly unanimous judgment on alcohol as a serious menace to the welfare of future generations had emerged owing to the influences of nineteenth-century temperance science and the medical theories of degeneration propounded by alienists and inebriety specialists. After the turn of the century writers on intemperance, the disease of inebriety, infant mortality, physical deterioration, feeblemindedness, and eugenics continued to make use of similar notions about alcoholic heredity. Thus in 1910, when Karl Pearson first entered the alcohol arena with his contentious hard hereditarian view of alcoholism, he found himself confronting long-standing beliefs about the dangers of parental alcohol consumption. Temperance advocates and many doctors were averse to surrender these beliefs even in the face of new evidence from an unconventional source.

As will be seen next, Pearson's investigation of the theory that parental drinking could injure offspring prompted the same kind of response as that received by Archdall Reid's earlier attack on this cornerstone of temperance science. Both of these critiques forced medical professionals and social reformers to articulate their tacit assumptions about alcohol and soft heredity. On both occasions supporters of the racial poison theory also made efforts to close ranks and consolidate their authority as medical experts on the alcohol question. Most of these writers were anti-alcohol doctors who wanted to vindicate knowledge about
alcohol and methods of social reform espoused by the temperance and public health movements. But resistance to Pearson’s first memoir on parental alcoholism further revealed the continued existence of pronounced Lamarckian and even non-hereditary themes in the early British eugenics movement.

*Karl Pearson’s Challenge*

In the last chapter I described how the orthodox doctrine of hereditary alcoholic degeneration faced its first challenge from within the Society for the Study of Inebriety just before the turn of the century. A second critique of this doctrine was delivered in 1908 by the final report of the Royal Commission on the Care and Control of the Feeble-minded. These Commissioners specifically probed the issue of the hereditary etiology of mental deficiency, including the possible role of alcoholic heredity. The medical experts who were interviewed expressed conflicting opinions about the relationship between parental or ancestral drinking and mental defect in offspring. Yet the report of the Commission was unequivocally sceptical about “the possibility of alcoholism in the parents having any direct action on the germ or the organism of the offspring.”\(^5\) Hereditary feeblemindedness was considered to be simply “spontaneous” in origin, since the evidence submitted did not seem to support the hypothesis that parental drink habits or other evil environmental influences could harm either

the reproductive cells or the unborn child.⁶

After these preliminary assaults by the SSI Committee on Heredity and the Royal Commission on Feeblemindedness, the most severe blow to the racial poison theory was dealt in April 1910 by Karl Pearson, a leader of the British eugenics movement and founder of the science of modern statistics. Pearson and his associates at the Francis Galton Laboratory for National Eugenics, who referred to themselves as biometricians or experts in the mathematical analysis of biological and social problems, published the results of their research purporting to refute the popular idea that excessive parental alcohol consumption could harm offspring.⁷ In this memoir Pearson and his co-author Ethel Elderton claimed that "no marked relation has been found between the intelligence, physique, or disease of the offspring and parental alcoholism," and that even more surprisingly their findings seemed to suggest that "the balance turns as often in favour of the alcoholic as of the non-alcoholic parentage."⁸ In a second series of studies the biometricians further maintained that most of the chronic alcoholics confined to the British system of inebriate reformatories were victims

⁶It should be noted however that the Commissioners' characterization of the medical evidence was not entirely accurate. Many of the witnesses did indeed emphasize true heredity in the etiology of feeblemindedness, but at the same time the Commission virtually ignored the opinions of those doctors who said that in their experience parental drinking, syphilis, and improper nourishment during pregnancy were frequent sources of degeneracy. I shall return to these debatable conclusions of the 1908 Commission on Feeblemindedness at the end of this chapter.


⁸Ibid., p. 32.
of inherited mental or nervous weakness. Taken together these two seemingly contradictory findings comprised an alternative theory of the causal connection between alcoholism and hereditary degeneracy. The Eugenics Laboratory workers concluded that the alcoholic habit was not itself an antecedent of hereditary or congenital degeneracy, but that instead severe alcoholism was a symptom of existing degeneracy in a family line. Consequently only hereditary alcoholics were at risk to transmit the impulse to drink or other forms of mental instability to their offspring, while the vast majority of ordinary drinkers posed little or no threat to the biological quality of the race.

A bitter dispute ensued over Pearson's seemingly pro-alcohol findings, carried out in several of the major organs of the medical, temperance, and popular press. Pearson's adversaries were mainly doctors and social scientists who supported the anti-alcohol movement. However, even some of the biometricians' fellow eugenists spoke out against their controversial deductions on the alcohol question, including Saleeby himself. The first alcoholism memoir was reviewed negatively by William Sullivan in the Eugenics Society's journal and criticized by its president Montague Crackanthorpe in the pages of The Times. In fact the most serious of the many rifts that occurred over the years between the Eugenics

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9 Amy Barrington, Karl Pearson, and David Heron, *A Preliminary Study of Extreme Alcoholism in Adults*, Eugenics Laboratory Memoir XIV (Cambridge UP, 1910); David Heron, *A Second Study of Extreme Alcoholism in Adults, with Special Reference to the Home-Office Inebriate Reformatory Data*, Eugenics Laboratory Memoir XVII (Cambridge UP, 1912).

Society and Eugenics Laboratory centred on this very issue of parental alcoholism.

The generally inimical relations that existed between these two organizations ever since their founding no doubt owed much to the fact that the Eugenics Laboratory director Pearson had repeatedly succeeded in belittling the work of his sister Society. He had annoyed its leadership by refusing to join the EES or cooperate with its work in any way, while privately and publicly he repudiated that organization's propagandist efforts as premature—they were not yet founded on proper scientific analysis of social problems.\(^\text{11}\) The EES's official condemnation of the alcoholism memoir may also have had some relationship to the famous rivalry between the biometrical and Mendelian theories of heredity.\(^\text{12}\) During the course of the debate with Pearson, EES members Crackanthorpe and Saleeby did indeed express scepticism about the value of his new science of biometry as a methodology for studying

\(^{11}\text{On the acrimony between the EES and the biometricians see for instance Geoffrey Searle, }\textit{Eugenics and Politics in Britain, 1900-1914} (Leiden: Noordhoff International, 1976), pp. 16-17; and Lyndsay Farrall, }\textit{The Origins and Growth of the English Eugenics Movement, 1865-1925} (1969; New York: Garland, 1985), pp. 103-4. In February 1908, Pearson had declined an offer of the presidency of the EES, stating that he preferred to work along the lines of statistical research rather than in the direction of social policy. He also preferred to keep his distance from the Society because he feared that the chances of eugenics achieving the status of an academic discipline would be hurt by any association with its more disreputable characters, such as Havelock Ellis and Bernard Shaw. Letter from Pearson to Francis Galton, Feb. 7, 1909, in Karl Pearson, }\textit{The Life, Letters and Labours of Sir Francis Galton} (Cambridge UP, 1930), vol. IIIA, pp. 371-72.

inheritance, and they openly sided with the Mendelian geneticists.\textsuperscript{13} 

It must however be acknowledged that the EES as an organization never exclusively endorsed the Mendelian theory, since officially it taught an "even balance of Mendelism and biometry" in its science courses and lectures.\textsuperscript{14} The Society itself did not participate in the clash between the biometricians and Mendelians, although a handful of individual members were known for belonging to one school or the other. This scientific debate was therefore not the main point of contention in any of the public controversies that took place between the Eugenics Society and the Eugenics Laboratory. The hostility expressed by many individual Society members towards the first memoir on parental alcoholism likely had little to do with abstract debates over theories of heredity, but was instead motivated by very concrete concerns about the methods of race regeneration. Eugenists such as Crackanthorpe, Sullivan, and Saleeby were simply unwilling to accept Pearson's refutation of the racial poison theory and his denunciation of the eugenic value of anti-alcohol measures.

\textsuperscript{13}In his 1905 biology text, Saleeby had eagerly accepted biometry as the scientific foundation for eugenics; he only became hostile to the new school when its controversial alcohol studies came out. Early on he praised the biometricians as a "very important school of biologists" who "consistently employ mathematical methods in all their work...[and] excel in the detection of fallacies." Caleb Saleeby, \textit{Heredity} (London: Jack's Scientific Series, 1905), p. 39. But later he had only harsh words for biometry as a discredited science and a waste of money and energy, for example in his 1914 \textit{Progress of Eugenics}, pp. 4-12. Montague Crackanthorpe argued that Mendelism was a more useful tool for studying questions of human inheritance because biometry did not take into account the possibility of latent hereditary traits. Biometry was also declared useless as a guide to practical action because its findings were based on "mere probabilities." Crackanthorpe, "Alcoholism and Offspring," p. 6. But in other pronouncements he made as president of the EES, Crackanthorpe usually defended both of these approaches to the study of heredity.

In the following sections I shall therefore contend that resistance to Pearson's research was motivated by commitments to both the temperance and eugenics movements. Continued attempts to defend the racial poison theory cannot be dismissed as merely the last gasps of the dying field of temperance science. Instead it will be seen that many of Pearson's adversaries also believed that they were waging a battle over the proper scope and definition of the new field of eugenics. These eugenists and temperance proponents were outraged at the biometricians' research not only because it weakened the case for anti-alcohol reform, but also because it seemed to invalidate certain eugenic policies. Pearson had implied that since environmental factors such as alcohol could not injure offspring, then Saleeby's preventive and nurtural dimensions of eugenics were powerless to curb hereditary degeneration. Saleeby in turn objected that the biometricians did not speak for all members of the eugenics movement, and that their statistical findings constituted a "grave blow to the well-being of the English stock" since more and more degenerates would henceforth be produced owing to fallacious advice to ignore the racial poisons.  

This particular episode in the history of the early eugenics movement thus highlights very effectively the existence of two conflicting approaches to race regeneration in Edwardian Britain.

The next section of this chapter will discuss the history of the biometrical school and specifically the development of mathematical statistics as a methodology for research into medical and social ills. Pearson felt that his school's statistical work on alcoholism was crucial to his efforts to promote eugenics as the successor to any number of ineffectual

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environmentalist reform programmes, including the temperance and prohibitionist campaigns. It will be seen that temperance proponents responded to Pearson’s challenge mainly with emotionally charged assaults on his motives and his character, rather than with careful analysis of the many flaws in his research. They raised only two significant scientific objections to the first alcoholism memoir. First, all of the critics declared that the biometricians were unjustified in drawing definite conclusions about the pre-natal action of alcohol given that they had no data on whether parental drinking had actually preceded the birth of the offspring in their sample. And second, it was objected that the biometricians’ reliance on social scientific data alone gave no information about the crucial eugenic question of the physiological origins of heritable defects.

After describing in this chapter the bitter dispute that occurred between biometricians and racial poison theorists in 1910-11, in Chapter IV I will turn to an analysis of the social and professional meanings of the two styles of eugenics put forward by the two key players in my story, Karl Pearson and Caleb Saleeby. The work of both of these eugenists will be situated in the larger context of public health and social reform approaches to the perceived crisis of national efficiency in Edwardian Britain. An emphasis on the social context rather than scientific content of their theories of alcohol and degeneration reveals significant continuities between Pearson’s and Saleeby’s approaches to ameliorating racial vitality. Mainline eugenists, Lamarckians, and public health doctors alike were concerned about the same problem of how to breed an “Imperial race” from the degenerate residuum class. Members of all of these reform groups tended to blame individual character faults rather than socio-economic inequalities for the misery, ill health, and depravity so often found in that
segment of the community. Consequently there was little to distinguish the mainline and Lamarckian styles of eugenics when it came to their nationalistic rhetoric and moral condemnation of the working classes. Medical eugenists such as Saleeby may have extolled their own brand of eugenics as more benign than such negative measures as segregation or sterilization of the unfit, but their imperialist and classist assumptions placed them on similarly precarious moral ground as their mainline colleagues.

Although there will not be space here to address this aspect of eugenic discourses and policies at any length, it should likewise be noted that Lamarckian eugenics was hardly “benign” in the special treatment it accorded the female portion of the population. As mentioned in the first chapter, members of the eugenics and infant welfare movements typically assumed that the women of the nation were solely responsible for raising a healthy population. Hence fit middle- and upper-class women who chose to forego their duties as “race mothers” were accused of selfishly putting their own personal aspirations ahead of the greater eugenic good, while ignorant, feckless, and drunken mothers of the lower social orders were commonly blamed for the crises of infant mortality and physical deterioration.¹⁶ Saleeby and Pearson happened to have been two of the most outspoken advocates of this maternalist ideology as it was applied to women of all social ranks.¹⁷ Both writers

¹⁶For references see Chapter I, pp. 47-51, especially note 89.

¹⁷Saleeby, Woman and Womanhood; and Karl Pearson, “The Woman’s Question,” in The Ethic of Freethought, and Other Addresses and Essays, 2nd edn. (London: Adam and Charles Black, 1901), pp. 354-78. Other eugenists whose agendas were founded upon the maternalist ideology were Mary Scharlieb, Womanhood and Race-Regeneration (New York: Moffat, Yard, 1912); and Alice Ravenhill, “Eugenic Ideals for Womanhood,” Eugenics Review 1 (1909-10): 265-74. See also Richard Allen Soloway, “Feminism, Fertility, and Eugenics in
investigated the particular problem of inebrity among lower-class mothers, whom they identified as especially liable to give birth to or raise mentally and physically deficient offspring. The unique risks of female drinking were obvious according to Saleeby's racial poison theory: alcohol might exercise its toxic effects on the offspring either while in the womb or at the breast. The biometricians on the other hand did not accept the idea that maternal alcoholism could damage germ cells or the developing fetus, yet they still maintained that female inebriates posed a greater threat to the race than males owing to their high fertility and their natural role as primary caretakers in the family. A shared emphasis on "maternal inefficiency" as the principal cause of child morbidity and mortality thus represented a further continuity between the eugenic and public health strategies for ensuring the future of the race.

While the bulk of this thesis analyzes the scientific content and social context of Edwardian eugenics, the final section of Chapter IV will show that the controversy over Pearson's alcoholism memoir also revolved around conflicting scientific practices and

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18This argument was put forward by Pearson's research associate David Heron in the second Eugenics Laboratory publication on the female inebriate reformatory inmates. Summing up his findings on the excessively high fertility rates of female inebriates and speculating on the fate of the children born to such defective and depraved women, Heron concluded that the children were likely to suffer from inherited mental deficiency or insanity, and that "quite apart, also, from heredity, it is certain that these alcoholic parents are unfit to train or have charge of children. Indeed nearly all the inebriates committed under Section I of the [Inebriates] Act come to the reformatory on the ground of cruelty to children. The only conclusion that can be reached is that such children were better 'not born.'" Heron, A Second Study of Extreme Alcoholism in Adults, p. 83.
disciplinary distinctions. I suggest that the hostilities that erupted between Pearson and Saleeby cannot be accounted for exclusively in terms of their rival theories of hereditary degeneration and agendas for social reform. Of equal significance was the role played by their radically different scientific methodologies and underlying professional interests. The biometricians’ research on alcoholic heredity must therefore be situated in the context of their efforts to establish mathematical statistics as an academic discipline in its own right and to introduce advanced statistical techniques into the biomedical sciences.\(^1\) Pearson and his followers wished to see the establishment of more university departments of biometry and to create job opportunities for themselves as medical statisticians.\(^2\) They fought on many fronts to capture intellectual territory for their new scientific discipline. However, in the process of invading many fields of medical and scientific research during the first decades of the century, the biometricians invariably managed to alienate the laboratory and clinical researchers who were already inhabiting these professional domains.

One such instance in which the biometricians found themselves embroiled in a dispute over scientific theory, techniques, and territory was when they entered the alcohol arena and challenged the existing body of temperance research on alcoholic heredity. Saleeby in


\(^{20}\) This agenda was outlined most completely in Karl Pearson, *The Academic Aspect of the Science of National Eugenics. A Lecture Delivered to Undergraduates*, Eugenics Laboratory Lecture VII (London: Dulau, 1911).
particular framed the dispute between biometricians and temperance doctors in terms of contrasting opinions as to whether statistical or laboratory research was a more powerful tool for studying alcohol problems and guiding social policy. Saleeby defended the value of experimental, pathological, and toxicological studies, while Pearson seemed to assume that all questions about the effects of alcohol could be resolved through statistical analysis of social data collected from large sample populations. Both men also introduced into the debate arguments about the training, skills, and experience required in order to be recognized as experts in eugenic research and policy making.

At least for the short run, Pearson and the hard hereditarian eugenists appeared to have won the debate over alcohol as a cause of race degeneration. By around 1920, virtually all discussion of the special problem of parental drinking had vanished from the Anglo-American medical literature. The issue was not to be revived until the discovery of Fetal Alcohol Syndrome in the early 1970s.\(^21\) The scientific authority of the biometrical school was certainly one factor in the abrupt decline of the racial poison theory, although I would argue that their success in dethroning reigning beliefs about alcoholic heredity probably had less to do with the quality of their research than with the fact that the extensive quantitative analyses they presented were visually impressive. But perhaps a more important influence than any scientific refutation was the close association between the racial poison theory and the temperance movement. This theory therefore shared the fate of the teetotal and licensing

reform approaches to drink control, which sharply declined in popularity after the start of the First World War when the government initiated novel and far more effective moderationist policies.22

2. Karl Pearson and the Eugenics Laboratory

As the head of the Eugenics Laboratory and a prolific researcher and propagandist for the cause of race betterment, Karl Pearson was one of the most influential leaders of the British eugenics movement during the first two decades of the century. Today he is perhaps best remembered as the principal architect of the modern theory of statistics and the author of a classic text in the philosophy of science, *The Grammar of Science*.23 Pearson established the first university department of statistics and invented standard statistical techniques, most notably the product-moment method of calculating the correlation coefficient and the chi-square test for goodness of fit.24 He first became specially interested in statistics and

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22The new drink control measures introduced during the war included later opening hours and the afternoon closing of public houses. Little has so far been published on this sudden shift in drink control policies, but one useful source is a contemporary account by Arthur Shadwell, *Drink in 1914-1922: A Lesson in Control* (London: Longmans, Green, 1923).


biometry during the 1890s, while employed as a professor of applied mathematics and mechanics at University College London. By 1901, Pearson was devoting full time to research and teaching in the new mathematical field of statistics, work for which he was soon awarded a grant from the Worshipful Company of Drapers that allowed him to establish the Biometric Laboratory at University College. Then in 1906 he took over the directorship of the Eugenics Record Office from its founder Francis Galton, changing the name of this institution to the Galton Laboratory for National Eugenics in 1907. In 1911, Pearson was appointed the first Galton Professor of Eugenics at University College. The separately funded Eugenics and Biometric Laboratories were both incorporated into Pearson’s Department of Applied Statistics, which survived only until his retirement in 1933 when separate chairs of eugenics and statistics were established.

**From Mathematician to Biometrician**

Like his mentor Galton, Pearson first became interested in developing more powerful

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25 Prior to 1890 and his conversion to statistics, Pearson had published work in philosophy, geometry, and mathematical physics; he also devoted serious study to a range of topics in history, sociology, politics, and literature. As professor of applied mathematics and mechanics he was mainly responsible for teaching engineering students.

statistical techniques as a means of studying problems in evolutionary biology and heredity. In the pursuit of this aim, he and the zoologist W. F. R. Weldon co-founded in the 1890s the discipline known as biometry, which involved the application of mathematical methods to the biological, social, and behavioural sciences. Starting in 1893, Pearson and Weldon produced an influential series of papers on mathematical confirmations of the theory of natural selection. In order to solve the problems Weldon had set in the study of variation and speciation in natural populations, Pearson developed some of his most important statistical innovations, particularly for curve fitting and goodness of fit testing for distributions of various shapes. With this work he almost single-handedly established the discipline of statistics in over 100 papers published between 1893 and 1906. From the 1890s to the 1910s, Pearson's science of biometry was thus virtually synonymous with mathematical statistics.

Even though Pearson had initially been motivated to develop the techniques of biometry owing to his friend Weldon's biological research, there can be no doubt that he himself was always more interested in social issues and the human sciences. Hence most of the historiography of the science of statistics has focused on another major influence on Pearson.

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28 Pearson believed that biometry would elevate the biological and human sciences to their highest quantitative stage of development. He proposed three stages in the progressive development of all the sciences: the ideological or metaphysical, observational, and metrical. See Karl Pearson, *The Scope and Importance to the State of the Science of National Eugenics*, 3rd edn., Eugenics Laboratory Lecture I (1907; London: Dulau, 1911), pp. 15-18.

namely his interest in the study of human heredity as the chief antecedent to his important work on the theory of correlation.\textsuperscript{30} Pearson recollected near the end of his career how his eyes had first been opened to the potential uses of statistical analysis when he read Francis Galton’s \textit{Natural Inheritance} in 1889. He professed to have appreciated immediately that Galton’s important new concept of correlation might also be applied to studies in psychology, medicine, and sociology:

Here for the first time was a possibility, I will not say a certainty, of reaching knowledge—as valid as physical knowledge was then thought to be—in the field of living forms and above all in the field of human conduct.\textsuperscript{31}

Unfortunately though this retrospective account of Pearson’s “conversion” to statistics turns out to be fanciful: in fact Pearson’s initial response to Galton’s 1889 attempt to apply mathematics to the human sciences had been almost wholly sceptical.\textsuperscript{32} Nevertheless, once

\textsuperscript{30}One recent writer has placed heavy emphasis on Weldon’s influence as the main impetus to Pearson’s early statistical innovations. In doing so however she focuses entirely on the development of goodness of fit testing and does not address the history of the correlation coefficient, where it is generally accepted that Galton’s work on heredity and regression strongly influenced Pearson. MacKenzie and Norton both emphasize how the content of statistical theory was influenced not only by Pearson’s choice of research questions (i.e. evolution) but also by his extra-scientific interests—philosophical, social, political, and professional. On this view, his ideology of race betterment was a crucial motivational factor in the history of correlation theory. M. Eileen Magnello, “Karl Pearson’s Gresham Lectures: W. F. R. Weldon, Speciation and the Origins of Pearsonian Statistics,” \textit{British Journal of the History of Science} 29 (1996): 43-63.


\textsuperscript{32}Although favourable towards Galton’s statistical innovations themselves, Pearson at first expressed concerns about the “danger in applying the methods of exact science to problems in descriptive science.” He had reviewed \textit{Natural Inheritance} for a meeting of his Men’s and Women’s Club. See Stephen Stigler, \textit{The History of Statistics: The Measure of Uncertainty before 1900} (Harvard UP, 1986), pp. 303-5.
he had taken up the subjects of probability and statistics in the early 1890s, it was Galton’s interest in unravelling the laws of heredity for eugenic ends that first motivated Pearson to turn to the particular problem of correlation. This connection between correlation theory and eugenics will be explored further in the next section.

As Bernard Norton has explained, by around 1890 Pearson’s keen interest in the problem of national fitness had rendered the mathematician “intellectually primed” to delve into biological and biostatistical inquiries. By the late 1880s, Pearson had already begun working out his own social Darwinist accounts of human evolution and the history of nations. Some of his essays dating from this period reveal his independent development as a eugenist, as he began to explore ideas that would soon become crucial components of his eugenic creed, such as the “law of inherited characters,” the differential fertility of fit and unfit stocks, and the reproductive function of women. As early as 1897, Pearson reported on his demographic investigations into the average family sizes of various classes of the British community. In a lecture delivered in November 1900 he first clearly stated the argument in favour of reproductive selection or eugenics: “the greatness of a nation depends on the

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33 Norton, “Karl Pearson and Statistics,” p. 17. “We can see the emergence of a framework of thought that would make biometry an attractive proposition, which would make it a science likely to produce statistical results which could be prized for their philosophical significance, and which could be used in eugenic investigations” (p. 29).

dominant fertility of its fitter stocks.” By 1906, Pearson was thus well prepared to accept Galton’s offer to head the Eugenics Laboratory, even if he did so somewhat reluctantly at the time owing to the pressures of his many other scientific commitments. Over the course of the next 30 years he published almost 50 papers on eugenics (constituting almost 10% of his total scientific output) and lobbied tirelessly to legitimize the new field as a mathematical science and an instrument of social reform.

Pearson’s contributions to biometry and statistics led in 1903 to the establishment of the Biometric Laboratory at University College, where over the years his research encompassed not only further advances in statistical techniques but also investigations into natural selection, theories of heredity, craniometry, and physical anthropology. Pearson and his students also began to study problems in eugenics, using Drapers’ Company grant money to publish their very first work on the social problems of differential fertility and the inheritance of tuberculosis and insanity. Although Pearson’s scientific work from 1903 onwards


36The work of Pearson’s biometric school in the 1890s and 1900s is described most fully by Magnello, “The Non-Correlation of Biometrics and Eugenics.”

continued to cover a wide range of biological and non-biological topics, including a constant stream of contributions to the theory and technique of statistical analysis, there can be no doubt that eugenics occupied a central position on his research agenda. He may have originally invented biometry as a method for studying animal evolution and the laws of heredity, but by 1907 he had become deeply involved with the eugenics movement and committed to applying his statistical techniques to the cause of race betterment.

Statistics, Correlation, and Heredity

The modern field of mathematical statistics, to borrow the concise definition given in Donald MacKenzie’s history of the discipline, involves “the construction of a theoretical framework for the analysis of numerical data.”\textsuperscript{38} The crucial mathematical tool that distinguishes mathematical statistics from earlier styles of social or vital statistics is the application of probability theory. Victorian social statistics had involved simply the collection of numerical data showing distributions of disease and mortality over time and space.\textsuperscript{39} The intention was to gather quantitative and therefore supposedly objective information about the status of the population, which would then be applied towards enacting effective social reforms. Vital statistics were supposed to reveal correlations or cause and effect relationships between such factors as overcrowded housing and prevalence of


\textsuperscript{39}The “statistical movement” in England was led by civil servants such as Edwin Chadwick, the Secretary to the Poor Law Commission who wrote the famous 1842 Sanitary Report, and William Farr, the chief statistician in the Registrar General’s Office.
infectious diseases. At this point however the primitive statistical techniques of social scientists and medical officers of health did not involve probability theory or any higher mathematics. Instead conclusions about association were typically obtained by computing averages from series of data and simply comparing figures arranged in tabular form.

It was precisely this kind of simplistic analysis that the mathematician Pearson condemned as meaningless and attempted to replace with a more sophisticated approach beginning in the 1890s. He warned that the non-mathematical way in which social reformers and medical men handled their data could not lead to any sound conclusions. By simply looking down the list or comparing percentages one could tell nothing about whether the observed differences or associations were actually significant or merely consistent with what would be expected in a chance distribution. Medical officers of health who had been

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42 Pearson attempted to explain the critical importance of probability theory to data analysis in one lecture he delivered to an audience of public health doctors. He used as his example the phenomenon of so-called “cancer houses,” or dwellings that seemed to “receive more than their due number of cancer cases.” Only with some knowledge of the laws of probability would it be possible to determine whether cancer was significantly associated with unfavourable environmental circumstances in these houses. “There will, of course, always be houses with multiple cancer cases in any district; the real question is: Do they exceed those which we should expect would arise from a random distribution of our marbles?” Karl Pearson, *Eugenics and Public Health*, Questions of the Day and of the Fray
trained in this old style of vital statistics believed that they were able to identify the causes of such ills as cancer, phthisis, or infant mortality. Pearson however bluntly informed them on at least one occasion that their studies were little more than “fatuous argumentations,” marred by both a paucity of data and a lack of knowledge about the mathematics of probability. These kinds of studies were further flawed in that they failed to take into account likely alternative explanations or multiple causes of a given phenomenon. As Pearson explained, “here we reach the great rule of modern statistics: When investigating the relation of two characters which you find associated, test whether they still remain related after you have given all other characters likely to be influential constant values.”

The biometricians were thus the first mathematicians to develop probability-based analytical techniques—most notably a whole series of correlational methods—for determining whether any relationship truly existed between two given variables. Correlation coefficients were used for example in the infamous 1910 study of parental alcoholism to measure the presumed relationship between insobriety and the fitness of offspring. The history of correlation theory begins with the father of eugenics Francis Galton, who conceived this method “not as an abstract technique of numerical analysis, but as a statistical

VI (London: Dulau, 1912), pp. 16-17.

43Ibid., pp. 23-24. A clear explanation of the advantages of using coefficients of correlation rather than mere percentages, along with the technique of partial correlation to separate out the effects of multiple causal factors, was also provided by Pearson’s colleague David Heron in his 1912 memoir on alcoholism and mental defect. It seems that by this time Heron and Pearson had realized the need to begin educating their medical and lay readers in the basics of mathematical statistics, if their work were ever to gain acceptance. Heron, Second Study of Extreme Alcoholism in Adults, pp. 29-33.
law of heredity."\textsuperscript{44} The study of heredity had become the polymath Galton's main field of interest during the 1860s, and in 1876 he made his first statements of the normal distribution of inherited traits and the law of regression. He had discovered in some experiments breeding sweet peas that the mean offspring of for instance unusually tall or short parents tended to revert or regress back towards the mean for the entire population. He next asked how it could be that "although each individual does not as a rule leave his like behind him, yet successive generations resemble each other with great exactitude in all their general features."\textsuperscript{45} It was this question about inheritance, as Theodore Porter has explained, "that inspired Galton to develop the basic mathematical apparatus for analyzing variation that he eventually recognized as a general method of correlation."\textsuperscript{46} His work on correlation itself had originated with his interest in anthropometrics and criminal identification. In 1888 he applied the arithmetical and graphical techniques he had derived for measuring the intensity of heredity (regression) to the problem of measuring the "degree of interdependence" between two organs in the same individual, such as arm and leg length. This finally led him to recognize that his measure of regression $r$ was also an expression of the "closeness of co-

\textsuperscript{44}Porter, \textit{Rise of Statistical Thinking}, p. 270.


\textsuperscript{46}Porter, \textit{Rise of Statistical Thinking}, p. 287. Another straightforward explanation of Galton's innovations can be found in Eisenhart, "Karl Pearson," p. 465; for a longer analysis see Stigler, \textit{History of Statistics}, pp. 267-99. The normal distribution or bell curve had been discovered and utilized earlier by error theorists such as Quetelet, but it was Galton who first saw the curve not as a measure of error to be eliminated but of variation to be studied by biologists.

Galton himself did not pursue the concept of correlation any further, but instead his methods for measuring variation and correlation began to be applied and extended by other researchers, most notably the biologist W. F. R. Weldon. As the mathematical problems entailed by Weldon's investigations of animal morphology and natural selection became more and more complex, he enlisted in 1893 the help of his University College colleague Pearson.\footnote{On the Weldon-Pearson collaboration between 1893 and 1906, see E. S. Pearson, \textit{Karl Pearson}, pp. 18-26; Farrall, \textit{Origins and Growth of the English Eugenics Movement}, pp. 67-69; Eisenhart, "Karl Pearson," pp. 449-50; and Magnello, "Karl Pearson's Gresham Lectures."}

Pearson had first shown an interest in probability theory late in 1892, when he began delivering a series of university lectures on the laws of chance. But it was the impetus of Weldon's research that led him to begin original investigations into probability, namely on the analysis of asymmetrical distribution curves. In the course of his collaboration with Weldon, measuring variability and the force of evolution in animal populations, Pearson introduced his method of moments and other goodness of fit tests. His particular goal was to demonstrate that asymmetrical or double-humped distribution curves for a given biological variation could be broken down mathematically into two curves representing a dimorphic population—which presumably represented a population undergoing speciation due to some selection pressure.\footnote{Magnello, "Karl Pearson's Gresham Lectures," pp. 49-57; Porter, \textit{Rise of Statistical Thinking}, pp. 307-8; Stigler, \textit{History of Statistics}, pp. 330-38. Pearson's first published statistical paper, in which he began this important work on natural distributions, was}
Pearson always regarded this work on distributions as one of the central problems of statistics, along with his fundamental contributions to correlation theory. In an 1896 paper on heredity and regression, he derived the value of \( r \) for a bivariate normal distribution (measuring the relationship between two continuous variables) that has come to be known as "Pearson's coefficient of correlation" or the product-moment method. In this and subsequent papers he illustrated the practical value of the new statistical methods of measuring association by using hereditary attributes as his principal examples. After the earlier success with applying statistical methods to the study of speciation, Pearson had come to be "impressed by the power of statistics as an agent of mathematization in the biological sciences" and hence sought to extend biometry into other areas of research. In particular, many of his subsequent innovations were developed in the context of his growing interest in eugenics, much as had been the case when Galton first invented regression and correlation as instruments for measuring the influence of heredity.

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"Contributions to the Mathematical Theory of Evolution," *Philosophical Transactions of the Royal Society* 185A (1894): 71-100. In later papers he illustrated the practicality of his system of curves with examples covering a range of topics from barometric pressures to heights of schoolgirls to pauperism statistics. This work on distribution led him to the invention of the chi-square test in 1900.

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52Pearson also used his correlation methods to mathematize Galton's theory of inheritance, the law of ancestral heredity, by showing how regression could be accounted for in terms of the relative contributions made to an individual's make-up by all remote ancestors. Karl Pearson, "Mathematical Contributions to the Theory of Evolution. On the Law of Ancestral Heredity," *Proceedings of the Royal Society* 62 (1898): 386-412. However, his main
By the late 1890s, Pearson had become interested in using the coefficient of correlation as a mathematical measure of heredity for any given characteristic shared by an individual and his relatives. He foresaw that methods for calculating correlation might eventually be enlisted in a programme of positive eugenics: they could serve as tools for predicting patterns of hereditary transmission and associations between different traits. From his very first correlation paper of 1896, Pearson also used the new technique to illustrate the high degree of association between excessive fertility and undesirable human attributes, thereby proving mathematically the need for eugenic interference to check the reproduction of the unfit and raise the birthrate of the superior classes. Although these examples serve to illustrate the crucial role of eugenic thinking in some of Pearson’s early statistical innovations, even more relevant to my story was the key role played by the “calculus of correlation” in legitimizing the biometricians’ convictions about the hereditary origins of virtually all human attributes.

Incentive for working on correlation theory was always its application to immediate eugenic problems. Pearson himself explained that the growth of mathematical statistics had been driven by both kinds of questions: “To find the correlation of the health of a child with the number of people per room while you render neutral its age, the health of its parents, the wages of its father, and the habits of its mother [by partial correlation], is no less vital a problem than Galton’s correlation of character in parent and offspring. It requires indeed more mathematics, but the mathematics are not there for the joy of the analyst but because they are essential to the solution.” Karl Pearson, “Notes on the History of Correlation,” *Biometrika* 13 (1920): 45; Porter, *Rise of Statistical Thinking*, p. 310.

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53 Eugenics as the motivation for this aspect of Pearson’s statistical work is discussed by MacKenzie, *Statistics in Britain*, pp. 90-91 and 168-69. The multiple regression methods Pearson pioneered for measuring the degree of correlation between generations are still used in genetic analysis today, for cases such as milk production in cows where a whole complex of genes is apparently involved and the outcome of a given mating cannot be predicted by simple Mendelian rules. Eisenhart, “Karl Pearson,” p. 463.

and pathologies.

Correlation coefficients measure the degree of relationship between two classes of phenomena suspected to be related, such as the heights of mothers and daughters. Other pairs of variables that the biometricians investigated for possible dependence included low intelligence and defective nutrition in children, and health of children and amount of drinking by parents. An outcome of +1 or perfect correlation means that a high value for one variable also implies a high value for the other, an outcome of 0 means the phenomena are totally independent, while an outcome of -1 means that a high value for one is found with a low value for the other. Measurements close to +1 implied a cause and effect relationship, for instance between poor nutrition and low intelligence in offspring.\textsuperscript{55} At the other end of the

\textsuperscript{55}The biometricians' research reports often made assertions about likely causation where high correlations between two factors had been found, even though this contradicted Pearson's own warnings about the scientific status of the category of causation. Bernard Norton and Lyndsay Farrall have discussed how Pearson's phenomenalist philosophy of science, laid out in his \textit{Grammar of Science}, shaped his views on causation and the value of statistical forms of scientific inquiry. The concept of correlation could replace that of causation in scientific theorizing since according to Pearson's philosophy the underlying causes of phenomena were not knowable and therefore should not be speculated on. The category of correlation was sufficient for describing our experiences of the links between phenomena, whereas we had no experience of deterministic causation. Norton, "Karl Pearson and Statistics," p. 15. Causation was defined merely as the "overwhelming probability" that one phenomenon would follow another: in other words, "causation in this sense was merely the highest possible measure of correlation between two events." Farrall, \textit{Origins and Growth of the English Eugenics Movement}, pp. 122-23. Here is how Pearson himself explained his philosophy of knowledge in the human sciences: "The fundamental difference between the categories of causation and correlation is that we replace absolute association by a weaker link. In causation A is always followed by B; in correlation A may be followed by B, C, D, or E, but on the average with certain definite frequencies. Making the frequencies of C, D, E, indefinitely small, we again fall back on B absolutely associated with A, or our correlation passes into the causation of the physicist." Karl Pearson, \textit{Nature and Nurture: The Problem of the Future}, 2nd edn., Eugenics Laboratory Lecture VI (1910; London: Dulau, 1913), p. 21.
scale, negative correlations did not mean no dependence between two variables, but rather a possible connection between one variable and the inverse condition of the other. For example, the biometricians found numerous negative correlation coefficients between parental drinking and indicators of poor fitness in offspring, which suggested to them that high levels of alcohol consumption might be associated for whatever reason with having healthier children.

The Eugenics and Biometric Laboratory workers believed that one of the most profound applications of their calculus of correlation was in attempting to gauge the intensity of heredity. To this end they utilized large bodies of data on various physical measurements between parents and children and between siblings: the relatively high correlation coefficients between relatives were then interpreted as showing a strong hereditary component. Earlier in his statistical career Pearson had also established to his satisfaction that mental characters such as intelligence and moral sense were inherited to the same degree as physical ones.\(^6\) It was discovered in all cases that the coefficients of correlation typically

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\(^6\)Karl Pearson, "On the Inheritance of the Mental and Moral Characters in Man, and its Comparison with the Inheritance of the Physical Characters. The Huxley Lecture for 1903," *Journal of the Anthropological Institute of Great Britain and Ireland* 33 (1903): 179-237. Other inquiries into the heritability of mental traits were undertaken early on by Pearson's students, such as Edgar Schuster and Ethel Elderton, *The Inheritance of Ability, being a Statistical Study of the Oxford Class Lists and of the School Lists of Harrow and Charterhouse*, Eugenics Laboratory Memoir I (London: Dulau, 1907). Summaries of their statistical analyses of the physical traits stature, arm length and span, eye colour, hair colour, cephalic index, and health can be found in a couple of Pearson's eugenics lectures intended for general audiences: Pearson, *Nature and Nurture*, pp. 24-26; and Ethel Elderton and Karl Pearson, *The Relative Strength of Nurture and Nature*, 2nd edn., Eugenics Laboratory Lecture III (Cambridge UP, 1915), pp. 40-42. In these studies Pearson's coefficient of correlation was used for continuous traits such as stature and eyesight: these two variables were assumed to exhibit normal distributions (a bivariate normal population).
fell within the range of 0.4 to 0.6 on the scale of -1.0 to +1.0.

These values of approximately 0.5 were said to indicate that the influence of heredity was very strong—that the traits of offspring were heavily dependent upon those of their parents and ancestors. This conclusion was hardly surprising, given that the goal of the biometrical eugenists was to provide scientific justification for their programme of selective breeding. Given their hereditarian presuppositions, they did not even consider the possibility that close correlation might be due in part to the similar environments of parents and offspring. More puzzling to the modern-day reader of this work is the question of why the correlation coefficients turned out to be so small: if a value of +1.0 signified complete dependence—perhaps even a causal relationship—then Pearson's calculations suggested that a given phenotype was due only 50% to family resemblance. The "common cause" of the similar height of parent and child was the germ plasm of the stock, but what were the "non-common contributory factors" that accounted for the residual 50%?\footnote{Pearson, \textit{Nature and Nurture}, pp. 22-23.} One would imagine that only environment remained to account for the individual variation, but Pearson never admitted this nor did he ever point out that 0.5 was a remarkably low correlation for traits in which it could be presumed that inheritance was all-important, such as eye colour. According to MacKenzie, Pearson "presumably assumed that residual effects (the fact that the correlation was only 0.5 and not 1.0) were simply the result of chance variations."\footnote{MacKenzie, \textit{Statistics in Britain}, p. 172.} It was left to Pearson's successor as professor of eugenics, R. A. Fisher, to notice and attempt to
resolve this issue of the other 50% of the variance, by taking into account the complexities of Mendelian inheritance.\textsuperscript{59}

Measurements of the influence of heredity on various physical and psychical characters as well as on several pathological conditions were put to a specific use in Pearson’s eugenic research from about 1909 onwards. These correlation coefficients for the intensity of inheritance became the basis for comparison with another series of figures that were supposed to represent the influence of various environmental factors. Pearson and his two highest-ranking research fellows Ethel Elderton and David Heron were largely responsible for a series of studies published by the Eugenics Laboratory that considered the impact of alcoholism, maternal employment, overcrowding, poverty, and other unfavourable conditions of life on the fitness and ability of offspring. The overall conclusion reached in these studies was that the influence of heredity was significantly stronger than that of any of these external conditions: the average correlation value for nurtural factors was only 0.03, as compared with the average “coefficient of heredity” of 0.51.\textsuperscript{60} These figures were construed as proving that

\textsuperscript{59}Fisher’s 1924 mathematical analysis claimed to show that the effect of environment on for instance differences in stature between relatives was no more than 2 to 5%. See Mazumdar, \textit{Eugenics, Human Genetics and Human Failings}, p. 109.

\textsuperscript{60}It should be noted though that this figure of around 0.50 for the strength of nature was derived mainly from data on parental and fraternal resemblances in various physical characters (stature, arm length, eye colour), along with limited data on “mental ability.” Only six separate statistical investigations into the heritability of diseases had been made by the biometricians as of 1912, on tuberculosis, insanity, deafness, and poor vision (corneal refraction). This would seem to be a remarkably weak foundation for their conviction that virtually all diseases and social problems were due to bad heredity. Although they never specifically explained this in any of their eugenic lectures or publications, the Eugenics Laboratory workers actually presented most of their empirical evidence for their hereditar.

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the strength of environment in general was at best only one-fifth that of heredity:

I will not dogmatically assert that environment matters not at all; phases of it may be discovered which produce more effect than any we have yet been able to deal with. But I think it quite safe to say that the influence of environment is not one-fifth that of heredity, and quite possibly not one-tenth of it. There is no real comparison between nature and nurture; it is essentially the man who makes his environment, and not the environment which makes the man.\(^{61}\)

This statistically-based argument for the greater importance of heredity came to hold a central place in Pearson's eugenic propagandizing. He pronounced repeatedly in his many eugenics lectures and research reports that before the biometricians entered the scene, applying their powerful statistical methods to the study of disease and social ills, most social reform efforts had proceeded on the unfounded assumption that improvements to the environment alone could raise the standard of the race.\(^{62}\)


\(^{61}\)Pearson, *Nature and Nurture*, p. 27.

\(^{62}\)Pearson's eugenic programme found scientific justification not only in statistical research but also in the repudiation of theories of soft heredity. As he explained in a 1909 introductory lecture to a course at the Eugenics Laboratory, "three fundamental biological ideas" underlay hard hereditarian eugenics. First, it was taken for granted that "all human qualities are inherited in a marked and probably equal degree." Second, the biometrical eugeniasts were thoroughly convinced that no solid evidence supported the Lamarckian hypothesis of the transmission of somatic modifications. For this reason environmental reforms would not directly affect future generations: society should not rely on "changed environment for converting its inherited bad into an inheritable good." And finally, the
Degeneracy of every form has been attributed to poverty, bad housing, unhealthy trades, drinking, industrial occupation of women, and other direct or indirect environmental influences on offspring. If we could by education, by legislation, or by social effort change the environmental conditions, would the race at one rise to a markedly higher standard of physique and mentality? Much, if not the whole of the battle for social reform has been based on the assumption that this question was obviously to be answered in the affirmative. No direct investigation has really ever been made of the intensity of the influence of environment on man.\(^63\)

Pearson thus claimed for his calculus of correlation “a right to speak in the future with some authority in matters of social reform, and even on points of supreme national welfare.” The new science of statistics, applied to the domain of eugenic research, “for the first time enables us adequately to approach such problems as those of nurture and nature, and to determine what weight must be given to these respective factors in our scheme of social reform.”\(^64\)

Only this kind of objective and quantitative scientific knowledge about the relative importance of heredity and environment would lead to improvements in racial health and remedies for national ills such as alcoholism, tuberculosis, and infant mortality.

One of the biometricians’ strategies for promoting eugenics thus involved pointing out the methodological failings of their rivals the environmentalist social reformers and public health doctors. These authorities were not only ignorant of probability-based statistical analysis but also careless in failing to consider all possible causes of social ills and racial


\(^64\)Pearson, *Nature and Nurture*, pp. 9 and 23.
decay, particularly the hereditary factor. Given the likely multitude of factors associated with any one social problem, only the techniques of correlation and partial correlation could guide the investigator "towards a final judgment of what fundamentally are social cause and effect." Much of the research and virtually all of the rhetoric of the biometrical eugenists therefore focused on the calculus of correlation as the necessary scientific foundation for their new social reform programme. It should be noted however that in addition to statistical studies, family pedigrees were also utilized in some Eugenics Laboratory publications. Pearson never made programmatic statements about the role of pedigree studies in eugenic work, as he did for the calculus of correlation. Yet he made use of both methodologies in attempting to demonstrate heritability.

For instance Pearson illustrated one 1910 public lecture with several charts showing family histories of great musical and intellectual ability, along with another series of pedigrees of "general degeneracy," blindness, and deafness. He argued that the increasing numbers of such degenerates in the more recent generations of these families illustrated the reality of immediate national deterioration and hence the urgency of negative eugenics. Such graphical representations of family data had also been used in the biometricians' work on the inheritance of tuberculosis. Correlation coefficients and family studies together validated

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65 Elderton and Pearson, *Relative Strength of Nurture and Nature*, p. 5. In the alcoholism studies for instance, Elderton used partial correlation to factor out the influence of the age of children on their stature and weight, so that she could see what effect parental drinking alone had on these indicators of fitness.

Pearson's controversial conclusion that hereditary predisposition to tuberculosis was a more important causal factor than infection. Both kinds of evidence showed that the disease was more often transmitted between generations than between husband and wife.67

Likewise the largest single project ever undertaken by the Eugenics Laboratory was a collection of thousands of pedigrees published in the multi-volume *Treasury of Human Inheritance*. In this large-scale undertaking, Pearson and his colleagues constructed family trees often encompassing 4 or 5 generations, in order to demonstrate in an entirely theory-free manner the heritability of numerous human attributes, diseases, and physical abnormalities.68 In fact this collection of data on the occurrence of diseases in families constituted the eugenists' best empirical evidence for heritability and the potential effectiveness of reproductive selection. For they had actually managed to collect very little quantitative and statistical evidence for inheritable disease, having only undertaken correlational studies of the causes of blindness, deafness, insanity, and tuberculosis.69 One recent writer has even contended that pedigrees and actuarial death rates were the two most important methods employed in the Galton Eugenics Laboratory. While I sympathize with her complaint that these techniques for studying heredity have been completely ignored in the existing historiography of the biometrical school, she surely goes too far in pronouncing that statistics

69See footnote 60 in this chapter.
played at best a minor role in Pearson's eugenic research and propaganda.\textsuperscript{70}

3. The Alcoholism Memoir: Temperance and Eugenics Reactions

In the Eugenics Laboratory's controversial 1910 alcoholism study, the chief researcher Ethel Elderton subjected to statistical analysis data on the drinking habits and health of hundreds of families from two supposedly representative working-class populations in Manchester and Edinburgh.\textsuperscript{71} Elderton considered her data to comprise a sufficiently large

\textsuperscript{70}Magnello, "Non-Correlation of Biometrics and Eugenics." Magnello argues that statistical techniques were employed mainly in the Biometric Laboratory and thus she draws a sharp distinction between the "eugenists" and the "biometricians" who worked for and studied under Pearson, even though in fact the two groups overlapped. She focuses on the eugenists' work with pedigrees in the \textit{Treasury of Human Inheritance} and in their journal \textit{Annals of Eugenics}, which was only founded in 1928. She gives only two examples of how Pearson's school of eugenists used actuarial death rates, for example to study the success rate of sanatorium treatment of TB. On the other hand, Magnello admits that Eugenics Laboratory publications employed as many as 8 different techniques for calculating correlation, in order to solve such eugenic problems as the effects of parental alcoholism, the relative strength of nature and nurture, and the average fertility of different social classes. She also overlooks the many programmatic statements that I have cited in this section, in which Pearson and Ethel Elderton in particular emphasized the crucial importance of what they called the "calculus of correlation" for legitimizing eugenics.

\textsuperscript{71}Pearson's co-author on the 1910 alcoholism memoir was Ethel Mary Elderton, a former schoolteacher who worked as one of his three main research assistants during his first decade at the Eugenics Laboratory. The vital functions that Elderton performed for the biometrical school are hinted at in this letter written by Pearson to their benefactor Galton: fearing that she was going to leave the Laboratory because her salary was so low, Pearson urged that some way be found to keep her on since she was the "life and soul" of the institution—the one person who kept the whole operation running efficiently. Beginning in 1905, Elderton had held the position of Galton Research Scholar, serving as a low-paid computer, secretary, and assistant. In 1913 she became the third holder of the more prestigious and lucrative Galton Research Fellowship, and later, after acquiring a university degree, became Assistant Professor in the Eugenics Laboratory. Like other members of Pearson's staff, Elderton was genuinely committed to the eugenics cause. Under the auspices of the Laboratory she published several studies of her own on such topics as the fertility of different social groups
random sample from the general population to derive statistically significant results, as opposed to the small selected samples that medical men generally utilized in their investigations of alcohol problems.\textsuperscript{72} This data had originally been collected by social workers studying groups of children at a school for the feebleminded in Manchester and an elementary school in Edinburgh.\textsuperscript{73} Coefficients of correlation were worked out for the association between the environmental factor of parental drinking and the height, weight, general health, intelligence, diseases, and eyesight of the children. Elderton and Pearson wanted to determine whether or not parents whose levels of alcohol consumption were labelled simply "drinks more than is good for them" tended to have offspring that were inferior by any of these measures. Their quantitative results were interpreted as showing that the influence of alcohol was negligible (most of the correlation coefficients were less than


\textsuperscript{72}Elderton and Pearson, \textit{First Study of the Influence of Parental Alcoholism}, p. 3.

\textsuperscript{73}The Manchester data had not yet been published but were supplied to the biometricians by Mary Dendy; the Edinburgh data came from a somewhat more detailed Charity Organization Society Report. The Edinburgh sample comprised information on fourteen hundred school children, and although the size of the Manchester sample was never stated it can be seen from the tables of raw data presented in the first memoir that this group was even larger. Elderton and Pearson characterized these samples as being of "moderate size" from a statistical perspective. While the data samples may have been quite large, one might still question the reliability and objectivity of the social workers who described the conditions of life and habits of these poor families, and how useful their descriptions could be for a quantitative scientific analysis. Consider for example this typical case reported by a COS worker: "Very dirty, untidy home. . . Man teetotal, keeps well at his work. . . China and clothes lying piled about room, thick with dust; air very bad. Children sickly (eldest imbecile); wife a slattern." This was quoted in Elderton and Pearson, \textit{Relative Strength of Nurture and Nature}, p. 20.
0.1, thus apparently refuting the popular assumption that drinkers often begot degenerate offspring. As Pearson himself put it in one of his more caustic responses to his many critics, this work had now finally discredited the "vague and unproven assertions" of doctors and temperance proponents "that every glass of beer, every drop of alcohol which the parent consumes, produces its quantum of stupidity in the offspring."  

*Partisans and Polemicists*

Pearson and Elderton's shocking conclusions and often inflammatory rhetoric led to inevitable friction with the temperance movement. Scientific, polemical, and even personal assaults on Pearson, his biometrical school, and its style of research appeared in temperance journals and texts. Most of those who challenged his results were doctors or social scientists who took a special interest in the drink question. His most vociferous opponents were Caleb Saleeby and Sir Victor Horsley, both leaders of the medical temperance movement after the turn of the century. The celebrated neurosurgeon Horsley co-authored


\[\text{A partial bibliography of the responses to Pearson was compiled by Walter Edwards, } \textit{"A Bibliography of the Controversy between Professor Karl Pearson and His Critics,} \textit{National Temperance Quarterly,} \text{April 1911, pp. 233-40. Among the journals affiliated with the anti-alcohol movement that carried comments on the memoir were the National Temperance Quarterly, Temperance Chronicle, Alliance News, and School Physiology Journal.} \]

\[\text{Active in the temperance cause since 1902, Saleeby served as a vice-president of the National Temperance League, the International Prohibition Confederation, and the National Commercial Temperance League, and as the chairman of the World League against Alcohol. Biographical entry in E. H. Cherrington, ed., } \textit{Standard Encyclopedia of the Alcohol Problem} \]
an extremely popular anti-alcohol textbook, *Alcohol and the Human Body*, which even incorporated into its later editions a section responding to Pearson’s work on the risks of parental drinking. The prominent temperance leader and MP Sir Thomas Whittaker also joined the battle against Pearson, while the other most distinguished critics were the Cambridge economists Alfred Marshall and John Maynard Keynes. Although not members of any temperance society, Marshall and Keynes were both known as liberal social scientists and reformers who were concerned about drink as a cause of misery among the lower classes.

All of these partisans were infuriated that Elderton and Pearson’s single anomalous investigation of the drink problem was receiving so much publicity, even though it contradicted a large body of existing scientific evidence collected mainly by supporters of the temperance movement since the late nineteenth century. Opponents of the memoir repeatedly insisted that it be retracted immediately. They feared that its findings would be misunderstood by the public as providing scientific sanction for alcohol consumption, or a


“safe rule of conduct.” Elsewhere the biometricians were labelled “promoters of alcoholism,” who believed erroneously that their research made a strong case “in favour of alcoholism and against abstinence.”

Such fears turned out to be not entirely unfounded, as the first alcoholism memoir did indeed receive a remarkable amount of publicity. For instance the editor of the *British Medical Journal* initially defended the biometricians, and likewise in several editorial reviews the staunchly anti-temperance *Times* welcomed the study for its high scientific standards and its courageous stance against a popular teetotal fallacy. The *Times* editor left no doubt about his delight at the destruction of another plank in the temperance platform:

The controversialists who have assumed that the children of drunkards are the foredoomed victims of inherited disease are for the time deprived of a stock argument against the “poison” which they condemn.

One glowing review which had originally appeared in *The Times* was reported to have been reprinted in the *Licensed Trade News* and even quoted in advertising campaigns, as the liquor

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80 Mary D. Sturge and Sir Victor Horsley, “On Some of the Biological and Statistical Errors in the Work on Parental Alcoholism by Miss Elderton and Professor Karl Pearson,” *British Medical Journal*, Jan. 14, 1911, p. 73. Even as late as 1925, the Elderton-Pearson research was still being cited as dangerously fallacious in temperance texts such as the *Standard Encyclopedia* entry on “Alcohol: Alcohol and Heredity,” vol. 1, p. 121.


trade took advantage of the biometricians’ apparent scientific endorsement of its product.\textsuperscript{83}

In a half-hearted effort to repudiate charges that his discoveries about parental drinking amounted to a “blow to temperance,” Pearson suggested that temperance reformers really ought to have rejoiced at the knowledge that the children of alcoholics did not appear to suffer from any inborn handicaps of vitality or mental ability. An upbringing in a drunken, impoverished home could be damaging enough, but at least such damage was reversible and preventible—unlike hereditary degeneracy. Supporters of anti-alcohol measures may have been disappointed to learn that their proposals were not as essential to the well-being of children as they wanted to believe, yet they could still take some “consolation” in the statistical revelation that drink was not nearly as injurious as they had assumed.\textsuperscript{84}

Pearson and Elderton also tried to explain away their surprising observation that the children of heavy drinkers were in many respects more fit than the children of sober parents. Contrary to the way their results were often reported in the temperance press, the biometricians never claimed to have discovered that alcohol consumption was actually beneficial for drinkers or their progeny. Instead they argued that the intemperate parents must have come from genetically sounder stocks: they were “the more virile and physically fit members of the community” who would give rise to fitter offspring regardless of any


injury their somatic tissues may have suffered during their lifetimes. While this dubious argument conveniently suited their hereditarian presuppositions, it could not offset the distinctly anti-temperance tenor of the memoir as a whole.

For ten months beginning in May 1910, Pearson’s critics engaged him directly in debate over the merits of the Eugenics Laboratory memoir in reviews and letters to medical and scientific journals. Pearson himself was able to utilize the considerable financial resources of his Laboratories in order to publish three further pamphlets responding to the critics. The original memoir itself proved so popular and controversial that a second edition was printed in December 1910. At this same time Pearson and his colleagues Amy Barrington and David Heron also published a second study addressing yet another aspect of the alcohol problem: the question of whether the medical condition called chronic alcoholism or habitual inebriety was an inherited mental disorder. While continuing to maintain that alcohol consumption itself did not injure offspring, these biometricians now also suggested that a certain percentage of the “extreme alcoholists” committed to the inebriates reformatories were hereditary defectives, who if allowed to reproduce would pass on their inborn neuropathic taint.

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85 Elderton and Pearson, First Study of the Influence of Parental Alcoholism, p. 11.

The implication of these two studies taken together was that the racial effects of alcoholism could only be checked by the "cessation of parentage" on the part of unfit stocks, especially the alcoholic, insane, and feebleminded.

We see that it is rather the hereditary than the environmental factor to which in alcoholism, as in criminality and insanity, the first attention must be paid. It is a study of stock, not of environment, which must give us the real clue to the treatment of alcoholism. 87

Pearson and his fellow biometrical eugenists thus implied that anti-alcohol activists ought to focus their efforts on the more serious and long-term problem of hereditary transmission, rather than on the immediate miseries admittedly suffered by alcoholics and their families. The reduction in national levels of alcohol consumption currently called for by temperance partisans "would not produce any permanent racial effect." 88 Degenerate individuals who drank to excess because they were the victims of a hereditary diathesis would continue to propagate their defective germ plasm regardless of whether they had access to alcohol. From a eugenic standpoint—the only one of interest to Pearson's biometrical school—temperance reforms such as anti-alcohol education and prohibition would ultimately prove futile:

We may waste on the fight against alcohol energy which could only destroy the admitted social evils if it were directed to the extermination of the degenerate stocks themselves. 89

The biometricians' conspicuous entry into the field of alcohol research was justly


88Pearson, An Attempt to Correct, p. 42.

89Pearson, Groundwork of Eugenics, p. 7. Note that Pearson's use of language such as "extermination" may have been one reason he was often read as a "better-dead" eugenist, even though he surely meant "cessation of parentage" and not destruction of unfit individuals.
perceived at the time as an attack on the temperance programme and its scientific underpinnings. The temperance crusade was one of those environmentalist social reform movements that the hard hereditarian eugenists believed were relatively powerless to cure the nation’s various ills. Pearson proclaimed that the statistical evidence his school had compiled on a range of social and health problems revealed “the relative insignificance of nurture in influencing man’s welfare.”

Drinking, bad housing, and unhealthy trades did not cause mental deficiency, poor vision, or tuberculosis in children: instead he felt certain that these problems were more closely correlated with the hereditary unfitness of the parents themselves. This conclusion gave the truly scientific investigator “reason to pause when considering the methods of modern social reform.”

As far as our investigations have yet gone they show that improvement in social conditions will not compensate for a bad hereditary influence; the problem of physical and mental degeneration cannot be solved by preventing mothers from working, by closing public houses, or by erecting model dwellings. The only way to keep a nation strong mentally and physically is to see to it that each new generation is derived chiefly from the fitter members of the generation before.

In attempting to discredit the Eugenics Laboratory findings on the racial effects of drink, anti-alcohol crusaders resorted mainly to polemics and even personal insults, to which Pearson more often than not responded in kind. The controversy was characterized most strikingly by rhetorical excesses from both the temperance and biometrical camps, as each side quite correctly accused the other of prejudices that led to erroneous premises and

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91 Ibid., pp. 21-22.
conclusions. The scientific methods and qualifications of Pearson's mathematical school were also called into question, although most of the critics had less to say about his complicated statistical techniques than about the discerned inadequacies in his data. Finally, along with the issues of impartiality and adequate statistical analysis, the hostilities that erupted over the biometricians' alcoholism memoirs also revolved around conflicting scientific theories of hereditary degeneration. As the next section will show, Pearson's findings on parental alcoholism were recognized as a challenge to the racial poison theory of the action of alcohol.

During the course of the public controversy between Pearson and his temperance opponents, serious discussion of substantive issues suffered as the two sides argued past each other, traded insults, and even made accusations of fraudulence. The editors of The Times and the British Medical Journal condemned all of the combatants for using "words which have no proper place in a scientific discussion" and urged that "some small measure of courtesy may be introduced" into the debate.92 The tone had been set by Pearson and Elderton themselves, with their passing remark about the "vague and unproven assertions" that characterized most of the studies of alcoholic heredity cited by temperance partisans. In their early reviews of the biometricians' work, the economists Alfred Marshall and John Maynard Keynes were similarly blunt, referring to their complex mathematical apparatus as

“almost valueless” and “actually misleading.” Temperance leader Thomas Whittaker, although not a scientific or mathematical expert, nevertheless felt qualified to assert that Pearson had erected “a pretentious but entirely fallacious argument upon an absolutely rotten foundation.” And Pearson himself was amused to note that some teetotal critic had even accused him and his co-workers of publishing the first 1910 study as a defence of their own “drug indulgence.”

In a supplement to the first alcoholism memoir replying specifically to the Cambridge economists, Pearson admonished Marshall and Keynes for the “regrettable” tone they had adopted in their critiques, yet he could not refrain from responding to them in kind. For instance in one series of exchanges the economists had suggested that Elderton’s data had not come from representative working-class families as claimed, but that instead both the drinking and non-drinking groups belonged to particularly degraded sections of the community. In response Pearson sarcastically advised his celebrated adversaries to emerge


95 This was reported by Pearson, “Alcohol and Degeneracy,” British Medical Journal, Jan. 7, 1911, p. 50, and repeated in Barrington, et al., Preliminary Study of Extreme Alcoholism, p. 40, although neither cited the source of the allegation.

96 Pearson, Supplement: Reply to the Cambridge Economists, p. 3.

from their “cloistered studies” in order to gain more accurate knowledge of lower-class conditions of life: “I fear that our Cambridge economists live in a world of their own, quite out of touch with the true social conditions of large sections of the British population.”

This reproach was particularly ironic given that Marshall was well known for his visits to the slums, whereas Pearson himself never made any such efforts to gather first-hand information about the populations he subjected to statistical study.

Pearson further pointed out that neither Marshall nor Keynes had presented any facts of their own to back up their assertion that the drunkards in the sample population were actually being compared to “bad sober stock.” This argument was intended to explain why the children of the drinking group exhibited physique and abilities nearly identical to those of the sober group, despite the known detrimental effects of alcohol. Drink had presumably pulled the fitter parents and children down into the same poverty and ill health suffered by the inferior temperate families. Pearson, evidently forgetting that he himself had made the very same suggestion that the alcoholics must have come from sounder stock (since their children were sometimes fitter), repeatedly demanded statistical evidence of this difference.

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98Pearson, Supplement: Reply to the Cambridge Economists, pp. 22 and 17.


100The only kind of “control” that Elderton and Pearson concerned themselves with in this investigation was ensuring that the drinking parents were not genetically inferior to the sober ones. They had expected to find more debility in the offspring of the drunkards and wanted to rule out bad heredity as the cause. This was the purpose of the wage arguments which will be discussed presently. The only mention of what would today be called control groups came when the temperance opponents objected that the biometricians had not separated out a teetotaling group of parents for comparison with the moderate and heavy drinking groups. Other temperance studies had attempted to make comparisons with control groups of non-drinkers, although of course these studies lacked any proper statistical basis.
from his adversaries. When they failed to provide it, he dismissed their ideas as "not science, but the plausible verbalism which renders so much of economics barren."¹⁰¹

Marshall and Keynes, as members of the Royal Statistical Society and acknowledged experts in the use of social statistics, considered themselves fully qualified to critique the biometricians’ innovative methods of data analysis. From their perspective Pearson and his students were "mathematical outsiders," or in other words amateurs or intruders into a long-established tradition of vital statistics.¹⁰² Pearson’s status as an outsider to the existing statistical community was further evident from the fact that he never joined the Royal Statistical Society and was never honoured by it during his lifetime.¹⁰³ He criticized the members of that body—mainly social scientists and public health doctors—who still employed naive procedures of computing and comparing percentages. In reply, the practitioners of old-style methods of data analysis such as Keynes dismissed the calculus of correlation as "a needlessly complex mathematical apparatus." In the case of the alcoholism study, this unnecessary apparatus was supposedly being applied "to initial data, of which the true character is insufficiently explained, and which are in fact unsuited to the problem at hand."¹⁰⁴

In fact Keynes’s review of the first alcohol memoir devoted more attention to pointing out the flaws in the data used by the biometricians than to evaluating the new statistical


¹⁰⁴Keynes, "Review of ‘A First Study,’” p. 773.
procedures themselves. Keynes insinuated that the elaborate mathematics and overly precise calculations were intended to cover up deficiencies in the original data, specifically on the question of whether the parents had begun abusing alcohol before or after the children were conceived. Saleeby likewise warned that while the complicated biometrical superstructure certainly looked impressive, it also served to obscure some fundamental errors Pearson had made owing to his unfamiliarity with pathological and experimental investigations into parental alcoholism:

Its pages look orderly, and its tables models of exact analysis. This is the really scientific method in being, the unwary may well believe. Little does he realize that he is in the presence of an irresoluble chaos.105

Pearson’s critics made only the most general remarks about the sophisticated statistical techniques that had been used to measure the relative weight of hereditary and environmental factors. Not yet comprehending the value of probability-based analysis, they contended that complex techniques such as the method of correlation were simply not necessary for interpreting straightforward numerical data.106 For example Keynes felt that Elderton’s time-

105 Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” p. 58. Supposed omissions in the biometricians’ data were of particular concern to eugenists who believed that the whole debate rested on the question of whether or not the parents in Elderton’s samples had been alcoholic before their children were born. As will be seen next, this particular criticism derived from the racial poison interpretation of the action of alcohol.

106 Most contemporary readers would have fully grasped the biometricians’ findings only insofar as these were presented in the form of comparative percentages of healthy and defective offspring. Elderton and Pearson did not make much effort to explain how to interpret their many tables and graphs, and therefore few readers would have been able to understand or evaluate the use of correlation coefficients, contingency tables, and standard deviations that set this kind of analysis apart. As an aside, the difference between using the techniques of correlation and contingency was a question of whether the variables being investigated were “integral” or “nominal.” Whereas the coefficient of correlation could treat
consuming calculations were nothing but "labour wasted," since the conclusions drawn from them could have been deduced just as well from mere inspection of the conventional tables of percentages presented in the first memoir. The calculus of correlation only served to overwhelm the unprepared reader:

The tables in this memoir are not at all complex, and in most of them it can be easily seen with the naked eye that no significant degree of correlation is present. . . . Trouble which might have been better spent on improving the original material has been needlessly expended on computations, which add little to our knowledge, and which confuse, though they may also impress, all readers outside a very restricted class.107

Even though none of Pearson’s adversaries were able to evaluate his mathematical methods, they could nevertheless have taken note of certain obvious weaknesses in the way that he interpreted his correlation coefficients throughout the alcoholism reports. Surprisingly, no one bothered to comment on the fact that he had failed to apply a single standard for assessing the significance of each coefficient derived. In a later publication Pearson tried to give some indication as to what the figures for a “high, considerable, moderate, and low” degree of correlation between two factors might be, but in the alcohol

two variables that were continuous and measurable (such as height and weight), the coefficient of contingency was needed for variables that could only be classified into different nominal categories (such as drinking versus sober) and that required a larger than two-by-two contingency table. On Pearson’s methods of calculating contingency see MacKenzie, Statistics in Britain, pp. 153-182. In the first memoir Elderton and Pearson used standard deviations as a second way of gauging the relationship between drink and health, because these gave a definite sign (positive or negative) to each association and allowed them to construct graphs. However, to the untrained eye these graphs are even more incomprehensible than the calculated coefficients of association and mean square contingency.

memoirs and other Eugenics Laboratory reports no consistent scheme was employed. To give just one example from the first alcoholism publication, a coefficient of 0.11 was at one point described as "definitely significant," yet in the discussion that followed values below 0.2 were dismissed as meaningless owing to the fact that they were of the same order as the variations due to random sampling. In general, the correlation values arrived at in the biometricians' eugenic research were interpreted in whatever fashion best fit their hereditarian presuppositions.

Even statistical results that did not seem to meet expectations could be conveniently explained away given such a flexible interpretive scheme. For instance, Amy Barrington and her co-authors on the first study of inebriate reformatory patients found by a variety of methods that the degree of association between the factors of education and number of convictions for drunkenness was in the range of -0.17 to -0.44. Elsewhere these might have been called "high" negative degrees of correlation, which proved that better educated people were less often extreme alcoholists. But here Barrington simply dismissed the whole exercise, asserting that the total number of cases dealt with in the sample had been too small to get significant results. This manipulation thus allowed her to draw conclusions consistent

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108 Pearson, *Scope and Importance to the State*, p. 15. In this lecture, "high correlation" was defined as 0.75 to 1.0, "considerable" 0.5 to 0.75, "moderate" 0.25 to 0.5, and "low" 0.0 to 0.25. This scheme was never followed in practice. For instance David Heron called the 0.3 correlation between mental defect and intensity of alcoholism "high," and the 0.76 correlation between mental defect and inebriety "very high." Heron, *Second Study of Extreme Alcoholism*, pp. 39 and 58.

with mainline eugenic scepticism towards environmentalist reforms such as education: "we cannot take the easy line that the method of reducing extreme alcoholism lies simply in increasing effective education."\(^{110}\) She also fell back on a rallying cry familiar from many Eugenics Laboratory studies of the relative weight of nature and nurturial factors, namely the fallacy of assuming that "every association is causation."\(^{111}\) Pearson had similarly chastised medical temperance writers for their unfounded assumption that a strong association between drinking and mental illness necessarily implied a cause and effect relationship.\(^{112}\)

Another flaw in the biometricians' approach, obvious to the modern reader but completely overlooked by the scientific and medical critics of the day, was that it denied any influence of environment whatsoever. Pearson simply assumed that if parent and child or two siblings shared the same trait, as determined by the calculus of correlation or a pedigree analysis, then that trait must be largely genetically determined. He never acknowledged the

\(^{110}\)Barrington, et al., *Preliminary Study of Extreme Alcoholism in Adults*, p. 25. Similarly whenever a correlation coefficient for some environmental factor turned out to be much higher than expected, the eugenists explained away the apparent connection as a secondary influence of heredity. For instance when the children of a man in a low-paying job were found to be generally unhealthy, it was pronounced that the cause of their condition must not be his wages but rather his innate debility, which had landed him in such a job in the first place.

\(^{111}\)Ibid., pp. 24-25.

\(^{112}\)In this context Pearson was not apparently objecting to the concept of causation on epistemological grounds, as he had in the *Grammar of Science* where he explained that underlying causes were unknowable. Rather he questioned the particular causal factor that temperance reformers had fastened on: they had no evidence as to whether alcoholism was the cause or consequence of mental defect. "From this association of alcoholism, insanity and defective offspring, a confusion has arisen in the minds of many between association and causation. They have not troubled to investigate whether or not the mental defect antedated the alcoholism." Pearson and Elderton, *Second Study of the Influence of Parental Alcoholism*, p. 30.
possibility that home environment may have accounted for some amount of the similarity between family members. The biometricians even went so far as to downplay the role of environment in the single case where they found a high positive degree of association in the first alcoholism memoir—between maternal drinking and an unusually high rate of infant mortalities. Pearson admitted in a later publication that indeed the drinking sections of the sample populations suffered about 20% more child fatalities than the sober. His adversaries did not fail to note that this finding was incongruous with his general conclusion that the children of drinkers were healthier than the children of abstainers. They also presumed that large numbers of infant deaths were consistent with the racial poison theory: many newborns would have perished owing to the same kinds of pre-natal injuries that resulted in physical or mental defects in the survivors. Pearson however provided alternative *ad hoc* explanations for this seemingly pro-environmentalist result.

Pearson argued that these infant mortalities were due mostly to carelessness and accidents on the part of drunken parents, and only "possibly in a minor degree to a toxic effect on the offspring." Most of the children who perished through such accidental means had likely been perfectly healthy. In this way he tried to brush off the suggestion that


115 Sturge and Horsley, "On Some of the Biological and Statistical Errors," p. 76.

116 Elderton and Pearson, *First Study of the Influence of Parental Alcoholism*, p. 31. When pressed by Horsley to supply evidence for this conclusion, Pearson cited police returns indicating that it was quite reasonable to accept that so many deaths could have been caused by maternal negligence. Pearson, *An Attempt to Correct*, p. 13.
alcoholism was a component of the home environment of the growing child which might adversely impact on its health: alcohol might indirectly cause death, but apparently death did not count as a measure of fitness. When asked why he had not included among his statistics on the health of offspring cases in which mortalities had occurred, Pearson responded that “naturally we could only measure the health in the surviving children of school age, and it is these survivors who are of the first importance from the eugenic standpoint.”¹¹⁷ Yet in these same texts he also put forward an argument about the selective value of a high infant death rate that seemed to contradict his statement about how such deaths were not of any concern to the eugenist. He proposed that the harsh environment in which the offspring of drunkards were forced to live acted as a selective agent, weeding out the most delicate infants and leaving the innately fitter to survive. This could explain why the surviving descendants of drinkers were by and large healthier than those of non-drinkers, and it implied that infant mortality was actually beneficial from a racial standpoint.¹¹⁸

Unfortunately, Pearson’s adversaries rarely addressed these kinds of fallacious and inconsistent claims derived from his research on alcohol-related problems. They tended to avoid commenting on the mathematical aspects of his work and were easily distracted by trivial issues and definitions of terms. In fact both sides in this controversy seemed determined to evade or obscure each other’s main points of contention with the rhetorical tactics they employed in their partisan defences of hereditarian and environmentalist

¹¹⁷ Pearson, An Attempt to Correct, p. 10.

positions. One such distraction from any kind of productive dialogue were the charges of deliberate falsification levelled by some of Pearson's antagonists. Alfred Marshall for instance accused the biometricians of specially selecting and manipulating their data in one minor section of the first report, where they had calculated the average earnings for the alcoholic and non-alcoholic groups.\textsuperscript{119} Keynes also became preoccupied with this fruitless line of attack, thinking that he had caught Pearson in the act of cheating. When he closely examined the tables of raw data on wages, Keynes found that Pearson had evidently included fictitious cases in his statistical analysis in order to strengthen his argument that drinkers earned as much as sober workers.\textsuperscript{120} However, Pearson had not in fact been deliberately dishonest, and he successfully countered this attack by explaining how the tables of wages had been assembled and what their true purpose was.\textsuperscript{121}

The level of personal hostility in the temperance-biometrician debate escalated further when the temperance doctors Victor Horsley and Mary Sturge joined the fray in November 1910.\textsuperscript{122} They had been incited to action after the editor of the \textit{British Medical Journal} came out in favour of the biometricians. The senior author Horsley was likely responsible for the style and content of their joint submissions to the \textit{BMJ}, which frequently adopted a sarcastic

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\textsuperscript{121}Karl Pearson, "Influence of Parental Alcoholism," \textit{Journal of the Royal Statistical Society} 74 (1911): 221-29.

\textsuperscript{122}Mary D. Sturge and Victor Horsley, "Alcohol and Degeneracy," \textit{British Medical Journal}, Nov. 19, 1910, p. 1656.
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tone that mocked the perceived "intellectual confusion" of Pearson's responses and the pretentiousness of the "high mathematical mind." Yet the eminent surgeon made few constructive contributions to the whole debate. Horsley completely misunderstood the purpose of Pearson and Elderton's analysis of the wage data in the first memoir, as had Marshall and Keynes. The temperance writers thought that the biometricians wanted to measure the efficiency of alcoholic versus non-alcoholic workmen, in terms of their wage-earning capacity. Horsley erroneously asserted that having shown the average wages of the two groups to be nearly equal, Pearson and Elderton then went on to draw their "chief generalization" that alcohol does not impair the health or efficiency of the drinker himself. But no such conclusion was actually drawn by the biometrical eugenists.

Pearson and Elderton had introduced the wage data only as a way of determining whether the alcoholic parents were afflicted with any pre-existing hereditary defect. They used the figures for wages earned by alcoholic individuals during times when they were not drinking as a way of measuring their normal mental and physical capacity: "if the alcoholic parent were markedly inferior in physique or intelligence, his average wages would be markedly less than those of the sober parent." If it turned out that the intemperate parents were indeed markedly inferior, then that would provide an explanation for any differences found between their offspring and those of the sober group—the eugenists could argue that


heredity rather than environment had caused the degeneracy. Like Marshall and Keynes, Horsley and Sturge wasted a great deal of effort trying to expose the faults in this particular section of the memoir, even bluntly accusing Pearson of having fabricated data.\textsuperscript{126} Yet they never pointed out the obvious absurdity of Pearson's basic premise that wages were determined primarily by biological fitness. Horsley used this one relatively minor side issue in an effort to discredit the entire Eugenics Laboratory report. All he succeeded in doing however was to help perpetuate an erroneous, anti-temperance interpretation of the biometricians' findings on drunkenness and industrial efficiency. Moreover, Horsley's own blunders in trying to correct the data and calculations in this section only enabled Pearson to ridicule his scientific qualifications.

The Eugenics Laboratory published two further pamphlets replying specifically to the medical temperance critic Horsley, who had made numerous misstatements of fact and allegations of "forgery." Pearson chastised him for "perverting" the intent and results of the wage comparisons and explained yet again how the figures had been arrived at.\textsuperscript{127} He also singled out many examples of Horsley's own carelessness with data, for instance in handling official returns on the causes of infant deaths and in classifying cases as teetotalers or drinkers.\textsuperscript{128} Pearson spent a great deal of time detailing these individual errors, but he also laid broader charges against Horsley's scientific work on the drink problem. Because of his


\textsuperscript{127}Pearson, \textit{An Attempt to Correct}, pp. 16-23.

obsessive devotion to the temperance cause, Sir Victor was denounced as a "man now lost to science." He was merely a temperance orator, even a "fanatic," not an objective scientist. Horsley and Sturge's text Alcohol and the Human Body was likewise described as "purely a rhetorical production" aimed at an uneducated temperance audience.

In Pearson's opinion, any scientific research connected with the temperance cause was necessarily biased and therefore unreliable. The biometricians on the other hand claimed to be undertaking totally objective research into the alcohol question and other social problems. They professed to have begun the alcoholism study without any expectation that heredity would prove to be more important than environment. In fact they even went so far as to allege that they initially anticipated finding marked differences between the children of the drinking and sober groups. By contrast, temperance science was in Pearson's estimation nothing but "a perfectly appalling mass of fanaticism," in which "any processes or data are sufficient, if they can be made to support a preconceived opinion." He never cited any other workers in the alcohol field because he believed none of their studies had any scientific or statistical value. When Horsley for instance offered up evidence from clinical studies showing that alcohol could indeed damage offspring, Pearson devoted many pages to

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demolishing the credibility of this work.\footnote{133} His perusal of the existing medical and scientific temperance literature had convinced him that

the whole "scientific" basis of the movement was worthless. The men who were demonstrating the evil to the offspring of alcohol-using parents were doing so in nine cases out of ten by statistics, which they had no more notion how to handle properly than boys in an elementary school.\footnote{134}

All of Pearson's adversaries agreed that his first study on alcoholism and offspring contained one key flaw that was never addressed to their satisfaction: it had not taken into account the question of whether the children in the two sample populations had been born before or after their parents started drinking. Their heavy reliance on this particular argument illustrates well the continuing commitment of the temperance movement to the racial poison theory of the action of alcohol on germ cells or fetus. The idea of deleterious pre-natal effects of alcohol had long constituted one important argument for total abstinence and drink control legislation. But as I shall emphasize in the remainder of this chapter, the biometricians' refutation of this popular theory was also recognized as problematic from a eugenic perspective. The critics who responded to Pearson not only supported the anti-alcohol cause but also feared that national and racial decline would result from the promulgation of erroneous scientific information about the risks of parental drinking.

\footnote{133}{Pearson and Elderton, Second Study of the Influence of Parental Alcoholism, p. 29. This entire pamphlet was devoted to critiquing some popular temperance studies.}

\footnote{134}{Pearson, An Attempt to Correct, p. 36. Always the elitist, he ascribed the low standards of temperance science not only to the fact that it was statistically naive and designed to fit preconceived ideas, but also to the strong influence of lower-class and religious elements on the teetotal movement, which had "grown up largely outside the influence of the educated, critical, and scientific factors in our national life." Pearson and Elderton, Second Study of the Influence of Parental Alcoholism, pp. 5-6.}
Eugenics and the Racial Poison Theory

The British Lamarckian style of eugenics, with its reliance on the racial poison theory of the origins of hereditary and congenital degeneracy, can be clearly identified in many of the reactions against the biometrical studies of parental alcoholism. Caleb Saleeby’s responses to Pearson were most explicit in their eugenic content. In a paper read before a largely sympathetic audience at the Society for the Study of Inebriety, Saleeby objected that Pearson’s conclusions regarding the effects of intemperance on offspring had created a situation “gravely injurious to the great cause of temperance, and to the even greater, because more comprehensive, cause of eugenics.” He implied that whereas the temperance movement was mainly concerned with alleviating the immediate misery, poverty, and vice associated with drunkenness, eugenics addressed the more serious issue of how alcohol impacted on future generations. The widely publicized 1910 memoir had got eugenics into a “mess” that Saleeby was eager to clear up. He assured his audience that eugenics was not synonymous with biometrics and that not all eugenists were responsible for Pearson’s damaging conclusions. Despite this one anomalous study, anti-alcohol reform aimed at curtailing parental insobriety should still be considered an effective means of improving racial health:

Those who are really working against alcoholism, and have some first-hand acquaintance with its effects, must therefore not give up eugenics as hopeless because of recent events.136

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135Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” pp. 53-54.

136Ibid., p. 62.
Saleeby was the first member of the Eugenics Education Society to review Ethel Elderton’s statistical research on the association between parental alcoholism and degeneracy of offspring. Commenting on the preliminary report she presented in her 1909 lecture The Relative Strength of Nurture and Nature, Saleeby condemned Elderton’s conclusions on the grounds that they contradicted universal experience and existing scientific knowledge. Yet at this point he was still willing to acknowledge the potential utility of biometry for defending eugenics against the attacks of philanthropists and social reformers.\(^{137}\)

The next year another assessment of the biometricians’ work appeared in the pages of the Eugenics Review, written by Dr. W. C. Sullivan. Although not known as a supporter of the temperance cause, Sullivan had done research on maternal alcoholism and degeneration that was frequently cited in both the temperance and eugenics literature. He was one of the main champions of the racial poison theory at this time, and as such he criticized Elderton and Pearson for failing to use data suitable for answering the question of whether alcohol could cause pre-natal damage. He further noted that the biometricians’ inexperience in dealing with the clinical phenomena of alcoholism had led them to classify far too high a percentage of their sample populations as “alcoholics.” The likely inclusion of many moderate or occasional drinkers in the alcoholic group could explain why the average level of unfitness of their children was not as high as might be expected where there had actually been prolonged “soaking” of the parental tissues. Sullivan concluded by pronouncing that statistical analysis of such imperfectly arranged data was surely a less reliable method of

research than clinical observations and animal experiments. These kinds of studies had already shown decisively that alcohol abuse caused racial degeneration.138

The other prominent Eugenics Society member who publicly condemned the Elderton-Pearson study was the president Montague Crackanthorpe. His review in the pages of The Times implied that the publication of this research would only hinder eugenists' efforts to improve the quality of the stock. In particular, the EES had been planning to give testimony before the government's Divorce Commission on the issue of whether alcoholism should be allowed as grounds for divorce owing to its effects on offspring. But thanks to the contradictory findings of the Eugenics Laboratory, eugenists could no longer be seen as speaking with one authoritative voice on this issue.139 The appearance of Crackanthorpe's negative review prompted an immediate rejoinder from Francis Galton, who defended his protegé Pearson and the statistical methods they had both pioneered. Galton was so disturbed by this rift between the two branches of the eugenics movement that he even considered resigning from his position as Honorary President of the EES over this incident.140 In addition to Galton, a few other Eugenics Society members expressed support for Pearson and his controversial findings. These included Edgar Schuster, who had held the first Galton Research Fellowship in National Eugenics, and Archdall Reid, who gave a favourable review to the first alcoholism memoir even though he professed to having previously been sceptical


of the biometrical approach to eugenics.\textsuperscript{141}

Parental intemperance was also addressed in eugenic terms by the Society for the Study of Inebriety, although in that forum the majority opinion was even more decidedly opposed to the Elderton-Pearson results. In January 1911, the SSI held a special symposium to debate the scientific merits of the memoir. Only a few contributors defended Pearson’s study, including Frederick Mott, who by this time had abandoned his beliefs in the transmissible effects of alcohol, and Harry Campbell, who had been Archdall Reid’s main ally on the SSI Committee on Heredity. On the other hand, 14 communications expressed more traditional views about alcoholic heredity. Several of the SSI’s temperance doctors, most notably Sir Alfred Pierce Gould and G. Sims Woodhead, reiterated the idea that alcohol could indeed cause the deterioration of germ cells or embryos. Other SSI members who belonged to the Eugenics Society as well, namely Saleeby, Mary Scharlieb, Robert Jones, and R. Murray Leslie, similarly spoke out on this occasion in favour of blastophthoria, the racial poison theory, and nurtural eugenics.\textsuperscript{142}

The 1911 SSI discussion of the merits of the first memoir was initiated by the Society’s


\textsuperscript{142}These brief communications were printed in response to an introductory paper read by Theodore B. Hyslop, “The Influence of Parental Alcoholism on the Physique and Ability of Offspring,” \textit{British Journal of Inebriety} 8 (1911): 175-215. The SSI had initially given a very warm welcome to the work of the Galton Eugenics Laboratory, urging its readers in 1910 to purchase Pearson’s publications because of their “helpful results” on various eugenic issues. Shortly after that, however, the Elderton-Pearson study of alcoholism received a wholly negative review. “Memoranda,” \textit{British Journal of Inebriety} 7 (1910): 177-78, and 8 (1910): 50.
president Theodore Hyslop, a psychiatrist and proponent of the anti-alcohol cause. Hyslop’s special area of interest was the supposed mental deterioration of the Anglo-Saxon race: he blamed the increasing prevalence of nervous disorders on the pressures of modern civilization, especially overcrowding and its concomitant evils. He argued in favour of eugenic means of reviving the nation’s health rather than policies that aimed to rescue children from “unsavoury environments.” In particular, Hyslop believed that preventive measures such as education against parental indulgence in alcohol and regulation of the marriage of alcoholics would eventually eliminate the necessity for building costly “hospitals, prisons, asylums and other receptacles for the wreckage of civilisation.” Attention to the national drink problem was thus a matter of “the survival of the race” as well as the happiness and fitness of individuals.

Hyslop objected to some particularly ill-mannered accusations that Pearson had made regarding the scientific credentials of the SSI. Pearson had at one point described the majority of the Society’s members as biased teetotalers, as “a perfect army of critics—largely furnished with old-fashioned blunderbusses,” who had no valid contributions to make to research on alcohol. Hyslop was quick to point out that the Society had no such adherence


145Pearson and Elderton, Second Study of the Influence of Parental Alcoholism, pp. 25-27. Pearson wondered whether the SSI’s more respectable members, such as Clifford Allbutt and William Osler, knew about the “gross absurdities” that were regularly published in the
to teetotal or prohibitionist principles: "We profess to study. We have no axe to grind, no doctrine to disseminate, and no sermon to preach."\textsuperscript{146} In his analysis of the ongoing clash over the Pearson memoir, he declared that the members of the SSI were generally "in sympathy with the aims of the Eugenics Laboratory" if not with their methods or their policy conclusions. His remarks were intended to encourage "friendly collaboration" between the biometrical and temperance sides, and consequently he alone among the critics sought a compromise position. Whereas once he had freely attributed defects in the offspring to parental drinking itself, Pearson's study had now taught him to consider a second possible explanation, namely inherited neuro-psychosis. Hyslop could thus claim a measure of objectivity in this debate, since this new investigation had led him to "discard [his] previous conceptions."\textsuperscript{147} Nevertheless, he still argued that alcohol could directly damage offspring. His professional experience assured him that alcohol accentuated the devolution of already degenerate stocks, while animal experiments had already shown that it could produce weakened progeny in otherwise normal stocks.

John Maynard Keynes's special interest in the eugenics movement was evident from the fact that he served as treasurer of the Cambridge University Eugenics Society from 1911 to 1913 and joined the London branch of the EES in 1919.\textsuperscript{148} During his dispute with Pearson, Hyslop, "Influence of Parental Alcoholism," p. 175.

\textsuperscript{147}Ibid., pp. 175-76.

\textsuperscript{148}Much later Keynes delivered the EES's annual Galton Lecture, on "Some Economic Consequences of a Declining Population," \textit{Eugenics Review} 29 (1937): 13-17. On Keynes's participation in the Cambridge Society see Mazumdar, \textit{Eugenics, Human Genetics and
Keynes expressed concerns about alcoholism as a problem for the future of the race as well as for suffering individuals and families. He explained that the "practical conclusion" to be drawn from the biometrical study was that preventing drunkenness "will do very little for the children. The improvement of the next generation must be effected by other means."\(^{149}\) As his biographer has pointed out, although Keynes embraced the eugenics cause he was never sympathetic to the mainline style of positive eugenics which stressed raising the birthrate of the better social classes. Such a philosophy did not accord with his own economic theory that smaller families were the "means to the good life."\(^{150}\) Like Keynes, Alfred Marshall was also well aware of the racial aspect of the drink problem. He recognized that Pearson's invalid conclusions would do nothing to "further the improvement of the race."\(^{151}\)

The last of the major participants in the debate with the biometricians, the temperance doctors Horsley and Sturge, also contributed to eugenic discourses on alcohol. In their joint work *Alcohol and the Human Body*, they had explicitly stated that the study of the effects of alcoholism and other external factors on offspring was to be counted as a problem in eugenics, or the "science of good-begetting." Research into human heredity had clearly

\(^{149}\) Keynes, "Influence of Parental Alcoholism," p. 343.


\(^{151}\) Marshall, "Alcoholism and Efficiency," *The Times*, July 7, 1910, p. 12. In an earlier essay on the London poor and urban degeneration, Marshall had bemoaned the fact that the poor tended to turn to drink for relief from their tedious lives, leading to physical and moral deterioration. "And as to their children, the more of them grow up to manhood, the lower will be the average physique and the average morality of the coming generation." Marshall, "The Housing of the London Poor," *Contemporary Review* 45 (1884): 228.
shown that the “sins of the fathers” could be inflicted upon their descendants: “for a child to be really well-born at least two generations of healthy men and women must have played their part honestly and well.”152 Horsley and Sturge also commented on the fact that Elderton’s study had implications for eugenics as well as for the temperance movement. If eugenists chose to repudiate the racial effects of alcohol based on scientific findings that turned out to be incorrect, then “very grave injury” would be done to the science of human betterment.153

All of these doctors and social scientists argued that from a eugenic standpoint the main issue in their clash with the biometrical eugenists was the validity of the theory of germinal and embryonic poisoning caused by the external agent alcohol. Among numerous social surveys of intemperate families and populations that had been conducted during the last few decades, only the biometricians’ work failed to corroborate this theory. The critics tried to explain away its unexpected findings in part by asserting that Elderton had defined no true teetotaling control group for comparison with the drinkers.154 More importantly though,

152Horsley and Sturge, Alcohol and the Human Body, pp. 242–43. Horsley never joined the Eugenics Society, but Sturge was listed on its membership rolls from 1908 to 1911.


154Elderton and Pearson did not hide the fact that their “sober” or “non-alcoholic” group included many moderate or occasional drinkers, where the use of alcohol “does not appear to interfere with the health of the individual or the welfare of the home.” Elderton and Pearson, First Study of the Influence of Parental Alcoholism, p. 3. But the temperance critics such as Horsley believed that even minimal levels of alcohol consumption could affect the health of drinkers and their progeny, and hence argued that inclusion of this category of drinkers might have skewed the biometricians’ results. Sturge and Horsley, “On Some of the Biological and Statistical Errors,” pp. 74–75. Pearson however easily neutralized this line of attack by regrouping his data and demonstrating mathematically that the offspring of the known teetotalers were actually less fit than those of the larger sober class. Pearson, “Alcohol and
virtually every commentator focused on the issue of the timing of the parents' drinking habits relative to the conception and birth of offspring. Perhaps the well-known effects of pre-natal toxicity had not been manifested in Elderton's sample populations because most of the parents had become intemperate only after their children were born. Marshall, Keynes, Horsley, Saleeby, and most of the participants in the SSI symposium thus argued that the biometricians' research was completely valueless for answering any questions about pre-natal effects because it lacked the crucial data "as to the habits of the parents at the time of the birth of the children."\(^{155}\)

For his part, Pearson always implied that his laboratory's alcoholism studies had been designed to test the magnitude of both pre- and post-natal influences on offspring. Yet he and his co-authors made little effort to distinguish between these two possible causes of degeneracy. Evidently such details were considered irrelevant given the general finding that no significant correlation existed between parental drink habits and the health and ability of offspring.\(^{156}\) Some of Pearson's responses to the critics did however make specific reference

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\(^{155}\) Marshall, "Alcoholism and Efficiency," *The Times*, July 7, 1910, p. 12. None of the critics discussed the "nurtural" side of the question, or in other words the question of whether breastfeeding by alcoholic mothers was dangerous or the likely harm done to children growing up in alcoholic homes. All were completely preoccupied with the notion of pre-natal poisoning.

\(^{156}\) Elderton and Pearson, *First Study of the Influence of Parental Alcoholism*, p. 2. Despite his remarks about the irrelevance of alcohol-induced infant mortalities, Pearson usually seemed to have in mind the influence of unwholesome domestic conditions on infants and young children when he spoke of alcohol as an environmental factor. This would accord with other studies his biometricians undertook measuring whether such traits as the health, vision, or intelligence of offspring were correlated with factors such as overcrowding, malnutrition, and maternal employment.
to possible damage to the germ plasm or fetus. He asserted for instance that the importance of any kind of ante-natal action had been "grossly exaggerated" by temperance writers such as Saleeby and Horsley "for the purpose of propagandist effect."\(^{157}\) In other lectures he similarly questioned the reality of observed high rates of degenerate births resulting from drunkenness at the time of conception.\(^{158}\) He was willing to admit that Auguste Forel's theory of blastophthoria "may or may not be true" physiologically, since it was at least hypothetically possible that germ cells could become degraded in certain adverse circumstances. For him however the key fact was that no statistical evidence had so far been found to support this hypothesis, and thus he labelled the racial poison theory a product of partisanship and not good science.\(^{159}\)

Pearson also would have objected to any suggestion that the alcoholic habit or other morbid conditions could be passed on to offspring through Lamarckian inheritance. As an adherent of Weismann's principle of the continuity of the germ plasm, Pearson accused the medical and temperance critics of his 1910 memoir of still accepting, "without full knowledge of modern theories of heredity, the view that somatic variations produced by habit or environment are at once influential in changing the character of the germ-plasm."\(^{160}\) But in fact none of his opponents tried to defend a true Lamarckian mechanism of transmitted


\(^{160}\)Pearson, *An Attempt to Correct*, p. 23.
degeneracy, since by this time the racial poison theory had emerged as the more popular scientific explanation for alcoholic heredity.

Pearson's attempts to explain how his data did in fact address the crucial question posed by the racial poison theorists—whether or not the parents' drinking had preceded the birth of the offspring—only introduced further confusion into the whole controversy. Pearson objected that this same criticism could have been laid against any of the social surveys commonly cited with approval by temperance reformers: no one ever collected data on precisely when the parental alcoholism had set in.\textsuperscript{161} Despite the fact that his opponents were clearly holding his work to a higher standard than temperance science itself, Pearson still tried in vain to explain why his two sample populations must have included offspring who had been exposed to alcohol before birth. At first he merely asserted that because the drinkers had about equal numbers of younger and older children, then "if some children were born before parental alcoholism had started, some were certainly born after, and therefore this mixed category should be worse than the category containing children whose parents have not been alcoholic at all."\textsuperscript{162} But the critics responded that the toxic effects of alcohol would only be seen if the majority of the children had been exposed, not just "some." They further suggested that damage to the germ plasm would only occur where the parents had been alcoholic for a long period of time.\textsuperscript{163} Pearson argued that it was highly unlikely that all or


\textsuperscript{162}Pearson, \textit{Supplement: Reply to the Cambridge Economists}, p. 15.

most of the alcoholics had become so within just the past few years, or in other words after
the birth of their youngest children.\textsuperscript{164} He was also quite justified in pointing out that if
indeed most of the parents in his sample had become alcoholic only after their child bearing
years, as his opponents claimed, then this effectively negated their belief that alcohol posed a
serious threat to the race:

If parents who were alcoholic before the conception of their children are not
in our alcoholic group, but \textit{all} those parents became alcoholic after the birth
of their children, where, then, are the parents whose alcoholism before the
conception of their children is producing the extensive evils on which Sir
Victor Horsley discourses at such length?\textsuperscript{165}

The biometricians' general conclusion that parental alcohol consumption could not
significantly harm offspring sparked immediate outrage from both the temperance and
eugenics communities because it was perceived as supplying a "safe rule of conduct" that
would eventually lead to the production of more degeneracy in the British population.
According to Pearson's hard hereditarian doctrine of alcoholism, only those intemperate
individuals afflicted with an inborn mental disorder were at risk to give rise to similarly
defective offspring. The majority of heavy drinkers apparently posed little threat to the
overall fitness of their children, even though their families surely suffered other miseries
owing to frequent drunkenness. Non-mainline eugenists such as Saleeby thus interpreted
Pearson's doctrine as an attempt to remove the alcohol question entirely from the realm of

\textsuperscript{164}Pearson and Elderton, \textit{Second Study of the Influence of Parental Alcoholism}, p. 8;
1911, pp. 279 and 281.

eugenics. His many critics further believed that their own theories of alcoholic heredity implied a more efficient means of revitalizing national health. If alcohol use before or during pregnancy could indeed harm the next generation of the race, then racial decay could be arrested by removing from the environment this root cause of hereditary and congenital degeneracy.

*The Urgency of Preventive Eugenics*

According to Saleeby’s scheme of preventive eugenics, social policies designed to encourage or compel parents and prospective parents to avoid exposure to alcohol and other racial poisons had to be recognized as the “most urgent and comprehensive and fruitful duty” of the temperance reformer and eugenist alike.\(^{166}\) Saleeby conceded that for the moment there was still a great need for facilities to confine dysgenic social elements such as hereditary inebriates and the feebleminded. Over time, however, such facilities would become less and less important as the emphasis shifted to preventing healthy germ plasm from becoming spoiled in the first place. Attention to the racial effects of alcohol, syphilis, or lead could therefore contribute more to the cause of race betterment than could locking up stocks already reduced to a degenerate state. Negative eugenics alone could not save a race from gradual hereditary decay while the racial poisons were allowed to continue replenishing the supply of defective stocks:

The idea that we shall purify the race from its morbid elements even by the most rigorous and absolute segregation and sterilisation of unsatisfactory

\(^{166}\)Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” p. 66.
individuals, though practised upon a scale undreamt of by anyone, is seen to be mythical. All the time new degeneracy is being originated in and through the healthy persons whom the purely Darwinian-Galtonian idea of selection assumes to be beyond need of any protection.  

Thus as Saleeby explained, "the need of negative eugenics is simply an expression of the neglect of preventive eugenics in the past." His allies Victor Horsley and Mary Sturge similarly insisted that the best means of curbing racial decay would be to identify the original sources of degeneracy—namely the poisons such as alcohol and syphilis which could turn once healthy stocks into diseased. These temperance writers therefore favoured Saleeby's style of preventive eugenics over the mainline, hard hereditary doctrine that suggested the only possible solution was the segregation or sterilization of defective individuals. The creation of degenerates could be checked before it became necessary to "spend money freely" on the care and seclusion of the unfit in asylums, prisons, and workhouses:

We would point out that it is no less the duty of science to indicate the cause or causes of this state of things, in order that measures which are really preventive and remedial may take the place of those which, for want of fuller knowledge, are at present in vogue. It is not sufficient to spend money freely in striving to isolate these "degenerates" nor even in attempting to educate their permanently impaired brains; some scheme is needed whereby their creation shall be checked, and such flagrant deterioration of nerve tissue be prevented from occurring. In as far as this deterioration is due to taking of a drug or drugs, we contend that the State ought certainly to interfere and strive to improve the social habits of the community, when these habits threaten to undermine national efficiency and vitality.

In this anti-alcohol text, Horsley and Sturge called for legislative action to help improve the

167 Saleeby, "Imperial Eugenics," p. 466.


condition of the mother for the sake of the “future of the nation.” The most important aspect of maternal environment was the influence of drinking upon the traits of the unborn or newborn child. Although these authors never stated which specific drink control policies they favoured, their ideas about true preventive and remedial eugenic measures likely would have included reducing the number of drink sellers’ licenses or perhaps even excluding women and children from all drinking establishments.\textsuperscript{170}

According to the racial poison theorists, more and more families of sound English stock would be destroyed if they took Pearson’s erroneous advice and allowed their unborn children or their germ plasm to be exposed to alcohol.\textsuperscript{171} Biometricians and other advocates of hard hereditary eugenics were wrong to deny the well-established fact that external factors could alter the hereditary material, and to focus exclusively on “selection for parenthood among racial potentialities assumed to be inherently unalterable.”\textsuperscript{172} Moreover, the few thousand hereditary inebriates whom Pearson and his colleagues were so anxious to keep locked up in the special system of reformatories surely represented a less serious menace to the biological quality of the race than did the ruin of innumerable healthy stocks owing to alcoholic habits in the population at large.

Elderton and Pearson’s first alcoholism study had suggested that the majority of drinkers in the general population posed little threat of producing defective offspring. Given the biometricians’ tendency to seek hereditary explanations for all human traits and

\textsuperscript{170}\textit{Ibid.}, p. 250.

\textsuperscript{171}Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” p. 62.

\textsuperscript{172}Saleeby, \textit{Ministry of Health}, p. 2.
disorders, it seems likely that these researchers had initially expected to discover physical and mental stigmata of hereditary degeneration in some portion of the 15-30% of working-class parents found to be intemperate in their sample groups. But having refuted this assumption statistically, the Eugenics Laboratory workers next chose another strategy for proving that alcoholism—like many other social ills—could only be eliminated through negative eugenics: they would demonstrate the hereditary origin of extreme alcoholism in the much smaller population of convicted chronic inebriates. In these cases it was presumed that the uncontrollable drink habit was due not to "opportunity and defect of moral influence," but instead to an inherited nervous diathesis. The biometricians claimed that out of the 3000 or so women who had found their way to the inebriates reformatories since 1899, about two-thirds of these were mentally deficient owing to hereditary defect. This meant that out of 1.7 million convictions for drunkenness among women in England since 1899, only a tiny fraction (less than 0.1%) of the nation's total number of female drunkards were appropriate candidates for permanent eugenic segregation. Pearson and his co-workers were thus

\[173\] Pearson, An Attempt to Correct, p. 42. The Eugenics Laboratory's two publications on "extreme alcoholists" were co-authored by Pearson, Amy Barrington, who was their "computer" or person who performed the tedious manual calculations, and David Heron, who had been the Galton Research Fellow since 1907 and then was promoted to the position of assistant director of the Department of Applied Statistics in 1913. Their first report, published in December 1910, made use of incomplete records kept on 535 women admitted to the Langho Inebriates Reformatory in Lancashire since its certification in 1904. The second and more definitive study, published by Heron in 1912, used data from 865 women sentenced to all 11 certified reformatories that operated during the years 1907-1909. The latter data had been collected personally by Robert Welsh Branthwaite and published in his 1909 inspector's report. In both samples, 63-64% of the women were classified as suffering from some degree of mental imbalance, ranging from "eccentric, silly, dull, [or] senile" to clinically insane. Barrington, et al., Preliminary Study of Extreme Alcoholism, p. 8.
compelled to conclude that severe alcoholism had only minimal relevance to the problem of racial decay and a programme of negative eugenics:

We do not propose the segregation of all extreme cases of alcoholism, but the segregation of the mentally defectives, as they form one, if not the principal, source of such extreme cases. Further, we think it unreasonable that facts relating to perhaps 0.1% of convicted inebriates should be stated as applying to the whole alcohol-using section of the community.\textsuperscript{174}

At the same time though, the eugenic function of the inebriates reformatories was made to seem all the more urgent given the inspector R. W. Branthwaite's data on the high fertility of mentally deficient female drunkards. Branthwaite reported that in one sample 865 incarcerated women had so far given birth to 2589 children; among these were 554 feeble-minded inebriates who had had 1672 children between them. The biometricians manipulated these vital statistics in such a way as to support their assumptions about the dangerously large family sizes of degenerate stocks. As Heron summed up his interpretation of the data, "if we turn to the families of the inebriates who are classified as mentally defective or insane, the

\textsuperscript{174}Barrington, et al, \textit{Preliminary Study of Extreme Alcoholism}, p. 44. The biometricians' figure of 1.7 million convicted female drunkards was odd in that it actually referred to total number of convictions and did not take into account repeat offenders. Their figure of 2000 weak-minded inebriates referred only to those who had actually been confined to the reformatories since legislation went into effect, leaving no suggestion that the legal system had missed many more like them who deserved to be incarcerated on eugenic grounds. During the 1880s and 90s, there were an average of around 250,000 committals for drunkenness annually in Britain, comprising 145,000 separate individuals, of whom 33,000 were women. There were also estimated to be 11,000 female habitual drunkards with 10 or more prison sentences recorded against them—presumably many of these could have been identified as victims of innate degeneracy. For data on drunkenness convictions, see Leon Radzinowicz and Roger Hood, "Curing and Restricting the Habitual Drunkard," in \textit{A History of English Criminal Law and its Administration from 1750} (London: Stevens, 1986), vol. 5, p. 301.
picture that is presented to us is a terrible one." Heron conveniently excluded the 250 childless women in Branthwaite’s sample in order to come up with an average number of children per alcoholic mother of 4.3, which was pronounced an unusually high birthrate without furnishing any comparative statistics. Yet Branthwaite had actually found that the reformatory inmates had a lower birthrate than the national average. Those who were married or who had “rendered themselves liable to maternity” by cohabiting with men or working as prostitutes had on average only 3.15 offspring. Branthwaite himself supplied another ad hoc explanation for why his data resulted in “a lower figure than it would otherwise be.” He presumed that an immoral lifestyle of promiscuous intercourse had caused sterility in many of these women, and hence concluded with unjustified confidence that

without any undue straining of the statistics, there seems to be every reason for assuming that alcoholism does not check fertility. On the contrary, it seems rather to favour it, and would probably do so to a material extent but for the tendency of inebriate women to become immoral and consequently more or less sterile.176

In the two memoirs on extreme alcoholism, Pearson, Barrington, and Heron drew unequivocal conclusions about the hereditary etiology of mental deficiency and habitual drunkenness, despite a lack of definite information on this point from the inebriates reformatories’ data. At first they had been forced to acknowledge their inability to provide

175Heron, Second Study of Extreme Alcoholism, pp. 78-83, especially p. 80.

176Robert W. Branthwaite, Report of the Inspector under the Inebriates Acts, for the Year 1909, Parliamentary Papers, 1911, XXIX (London: HMSO, 1911), pp. 35-36. He regrouped his data in order to show that the “moral” women (married, widowed, or cohabited) had an average of 4.72 children each, while the “immoral” women (prostitutes) had only 1.84 children each. The former figure was taken as the expected norm for the inebriate population.
any direct evidence for heritability. They could merely insist that "a study of the pedigrees of degenerate stocks certainly supports this interpretation," whereas many of their own deductions from such a small sample group were "probabilities or suggestions rather than demonstrations." The case for innate mental deficiency was based mainly on the observation that a large number of convicted inebriate women had worked as prostitutes (as many as one-quarter to one-third of the sample populations). Although these inebriates as a group turned out to be of more nearly normal intelligence than the non-prostitutes, it was said that their choice of profession itself reflected their inherent immorality—which the biometricians interpreted as another manifestation of nervous weakness. Based on relatively small correlation coefficients of +0.1 between prostitution and intensity of alcoholism (measured in terms of number of convictions for drunkenness) and +0.25 between prostitution and bad conduct while in the reformatory, they concluded that these women must have started life with some character flaw that drew them to this lifestyle. The concluding remark in this section of the first report only drew attention to the tenuous nature of this whole argument: "We need more data to unravel these complexities, but they smack more of hereditary than environmental products."178

177Barrington, et al., Preliminary Study of Extreme Alcoholism, pp. 37 and 39. Elsewhere Pearson was even reduced to citing the work of several continental researchers demonstrating that habitual drunkards often had family histories of insanity and epilepsy, despite his expressed contempt for all such previous research on alcohol problems. Pearson, An Attempt to Correct, pp. 40-41.

178Barrington, et al., Preliminary Study of Extreme Alcoholism, pp. 30-33. In the follow-up study, David Heron put forward similarly indirect arguments for the hereditary diathesis. He contended that the existence of a relatively large proportion of epileptics in the convicted inebriate population (5%, as compared to 0.1% in the general population), combined with the
Fortunately for the biometricians, they had little need to defend their theory of inherited predisposition to alcoholism and other mental defects since this had long been a popular doctrine, originated as we have seen by degenerationist psychiatrists and inebriety doctors. Hence their second series of memoirs on extreme alcoholism in adults never provoked the kind of animosity that their first work denying the effects of parental drinking on offspring had. The idea that habitual intemperance was one of the stigmata of hereditary degeneracy remained especially popular among inebriety treatment specialists such as Inspector Branthwaite, who was the biometricians' principal authority on the heritability of alcoholism and the inefficacy of curing mentally defective drunkards. Even Saleeby, who had repeatedly called for the withdrawal of the original Elderton-Pearson report on parental intemperance, could agree with their view that in some cases severe alcoholism was a sign of

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fact that epilepsy was highly correlated with weak intellect, indicated that all three conditions must have the same cause, namely neuropathic heredity. Heron, *Second Study of Extreme Alcoholism*, p. 52. The biometricians further suggested that the hereditary nature of extreme chronic alcoholism was evident from the fact that the condition was usually incurable. They noted for example that one study of 156 patients released from the Lancashire reformatory showed a relapse rate of 61%, a figure which was remarkably close to the 63% of inebriates judged to be mentally deficient. The implication was that the hereditary defectives and the recidivists must have been one and the same, although this was never determined for certain. Barrington, et al., *Preliminary Study of Extreme Alcoholism*, p. 42.

179Branthwaite's hereditary presuppositions were expounded especially in his 1909 Inspector's Report, where he also reported that only 2.5 to 3 out of every 1000 alcohol users should be classified as habitual drunkards with a "psycho-neurotic fault." Branthwaite had by this time declared the reformatory experiment a failure in its original goals: consistently low cure rates meant that these institutions were only serving a custodial and eugenic function. He therefore agreed with the eugenist Heron that indefinite segregation to prevent procreation ought to be the primary rationale for continuing to run these reformatories. Branthwaite, *Report of the Inspector for the Year 1909*, pp. 15-16; Heron, *Second Study of Extreme Alcoholism*, p. 78.
hereditary neuropathic taint.

This part of the case has been proved up to the hilt over and over again; and though its existence is unknown to the biometricians, it is familiar to all students of alcoholism and psychiatry, and is challenged by no one who has ever studied either alcoholism or feeble-mindedness at first-hand.\textsuperscript{180}

Saleeby therefore advocated negative eugenic measures to deter "chronic, incurable, feeble-minded" inebriates from passing on their degenerate germ plasm:

We have yet to learn that though intemperance is often a sin, it is often more properly to be called a symptom—a symptom of nervous degeneracy, of which the most familiar form is what is what we call feeble-mindedness. . . . The business of those who believe in Eugenics, or Race-Culture, is to regard the alcoholism as a flag of warning, which declares the individual to be unworthy for parenthood.\textsuperscript{181}

However, Saleeby and other racial poison theorists insisted that Pearson's theory of degeneration did not describe the only possible relationship between alcoholism and mental deficiency, since alcohol abuse could be a \textit{cause} as well as a symptom of degeneration.

Referring to the Eugenics Laboratory studies on reformatory patients, Saleeby warned that a distinction had to be made between these two possibilities. The investigator "must distinguish real alcoholism, with its inevitable soaking of the germinal tissues, and possible blastophthoria, from the inebriety of the feeble-minded who may take very little alcohol at all."\textsuperscript{182}

\textsuperscript{180}Saleeby, "Professor Karl Pearson on Alcoholism and Offspring," p. 56.


The Origins of Hereditary Degeneration

The competing hard and soft hereditarian theories of degeneration further differed in their assumptions about what counted as the “root cause” of degeneracy. For Pearson and other mainline eugenists, the hereditary diathesis itself was the ultimate explanation for various diseases and social problems ranging from epilepsy to alcoholism to pauperism. Hence the only way to eliminate these problems was through restrictive eugenics, which usually meant permanent segregation. By this means the eugenist had to “endeavour to cut off at its source the production of degenerate stocks.” On the other hand, soft hereditarians such as Saleeby believed that in order to cut off degeneracy at its source the eugenist had to seek the causes of this diathesis in certain conditions of the ancestral environment. Thus Pearson’s adversaries protested that in the Eugenics Laboratory research reports “no attention has been paid to the question of the origin of defects such as bring the individual under the ban of negative eugenics.”

Saleeby in particular tried to draw attention to what he called the “primary factors of race-destruction,” namely the diseases and poisons that caused germ deterioration in previously healthy stocks. He recognized that with their decision to disregard the problem of origins, the biometricians were repeating an error made a few years earlier by the Royal Commission on the Care and Control of the Feeble-minded. In that forum, the question of the origins of defective germ plasm had been debated at some length. Saleeby borrowed the

185Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” p. 53.
language used by the Commissioners and many of their witnesses who had referred to feeblemindedness, alcoholism, and other hereditary defects as simply "spontaneous" occurrences. He feared that the general public might misunderstand this idea of spontaneously arising inborn diseases as meaning "due to no causes" and therefore despair of any hope of checking hereditary decay. But anyone who could believe that deleterious variations had no discernible causes had to be ignorant of contemporary scientific knowledge demonstrating that racial poisons damaged reproductive tissues and led to the production of defective offspring. Most leading British eugenists were guilty of such ignorance, since "hitherto official eugenic research has concerned itself entirely with transmission and not at all with origin." In one lecture before the Eugenics Society, Saleeby clearly stated the difference between his and Pearson's ideas about cutting off degeneracy at its very beginnings:

When the eugenist has pointed out how urgent is the need of interference with the transmission of degeneracy, he is certain to be asked as to the origin or prime cause or causes of degeneracy. . . . It is our great claim that we begin at the beginning, and reckon with the nature of the individual, which the rest of the world takes for nought, regarding only his environment or nurture. But if it comes to that, we must begin at the beginning ourselves. We might find, for instance, that environment in preceding generations had been the beginning of the degeneracy we were later confronted with.187

As mentioned earlier, the 1908 Royal Commission on the Feeble-minded had reached conclusions regarding the causes of mental defect and the validity of the racial poison theory


that were ambiguous at best.\textsuperscript{188} Most of the experts interviewed agreed that feeblemindedness itself was a hereditary condition and that negative eugenics should therefore serve as a primary justification for the permanent confinement of this deviant group.\textsuperscript{189} On the other hand, there was considerably less unanimity on the matter of the causal connections between mental deficiency and alcohol abuse. Interested in the prevention of the condition labelled feeblemindedness as well as the proper care and treatment of afflicted individuals, the Commissioners specifically asked their medical witness whether drinking by parents could produce mental degeneracy in the progeny.

Several respondents took the position later corroborated by the biometricians' alcohol research, namely that environmental factors were entirely unrelated to the hereditary predisposition to feeblemindedness and habitual inebriety. For example the distinguished biologist E. Ray Lankester stated in his prepared testimony that no observational or experimental facts confirmed the "imaginative teachings" that alcoholism, syphilis, or other

\textsuperscript{188}The purpose of this government investigation was to make recommendations as to the necessity and feasibility of funding institutions for the life-long custody of mentally defective individuals who did not properly belong in insane asylums. The category "feebleminded" was rather vaguely defined as an intellectual capacity less severely limited than that of so-called imbeciles and idiots. Medical experts speaking before the Royal Commission estimated that the total number of feebleminded who required constant supervision and training was around 50,000, or 0.14% of the British population. The number of victims of all varieties of mental deficiency was estimated at 150,000. The findings of this Commission led to the passage of the 1913 Mental Deficiency Act. Radzinowicz and Hood, "Eugenics Infiltrates the Penal Law: The Feeble-Minded Offender," in \textit{A History of the English Criminal Law}, vol. 5, p. 320.

disease in the parent could produce an underdeveloped brain in the offspring. He supplied a genetic explanation for feeblemindedness as an atavistic innate defect, in which 90% of cases came from parents with a similarly "primitive animal condition of cerebral activity." Archdall Reid further argued that the question of what causes the trait of mental deficiency to appear "is part of the general problem of the origin of variations," and not attributable "to deleterious agencies, disease, intemperance, privation, and the like, which produce 'morbid' changes in parents."

We have no option but to accept the belief held by most students of heredity, that variations as distinguished from acquirements, are "spontaneous" in the sense that they are not due to morbid or other conditions, but to an innate tendency displayed by all living creatures to produce offspring that differ somewhat from themselves. . . . In effect a variation is an experimental attempt of blind Nature to produce an individual better adapted to the environment than the parent. . . . Usually spontaneous differences are small; occasionally they are greater, as when a child is born innately deformed physically or defective mentally.191

By and large the conclusions summarized in the final report of the Commission agreed with these two prominent scientific authorities, coming down on the side of inborn variation rather than environmental influence as the principal cause of mental abnormality. It was asserted that "a large majority of witnesses" had spoken out in favour of the doctrine that "mental defect is spontaneous in its beginnings, and has a great tendency to recur in descendants, and thus is truly inborn and transmissible by inheritance."192 Furthermore, the Commissioners expressly denied any role to external factors in producing hereditary defect:


191Ibid., pp. 254-55.

Both on the grounds of fact and of theory there is the highest degree of probability that "feeble-mindedness" is usually spontaneous in origin—that it is not due to influences acting on the parent—and tends strongly to be inherited.\(^{193}\)

Most of the doctors interviewed had indeed provided statistics or individual case studies proving that the feebleminded often had family histories of mental defect. However, the report conveniently failed to mention that many of these same witnesses had also stated that alcoholism, syphilis, or poor nutrition of expectant mothers could produce mental deficiency by acting on either the germ plasm or the organism of the offspring. Contrary to what the Commissioners claimed, it was not generally presumed that bad heredity and bad environment were mutually exclusive categories of causation.\(^{194}\)

The majority medical opinion on the etiology of feeblemindedness was expressed by A. F. Tredgold, the leading British authority on amentia. The authors of the 1908 report evidently misinterpreted Tredgold's testimony as supporting their belief that most amentia was simply hereditary in origin. He reported that in his extensive clinical experience, 80% of cases were due to neuropathic inheritance and the rest to "extrinsic" causes. But the Commissioners disregarded the rest of his testimony, which discussed the importance of


194 In particular the medical testimony of Alfred Eichholz, James Crichton-Browne, Charles Mercier, A. F. Tredgold, F. W. Mott, Charles Hubert Bond, and Bedford Pierce continued to support notions of alcoholic heredity and other types of pre-natal injury. \textit{Report of the Royal Commission on the Feeble-minded}, 1908, XXXV, vol. 1, pp. 302-21, 425-47, 461-73, 493-508, 550-62, 562-79, and 708-14. Aside from Lankester and Reid, the only witness who stressed heredity as the main cause of feeblemindedness and rejected the idea that drinking also played a role was Dr. Henry Ashby (pp. 677-84). The fact that the 1908 report misrepresented the opinions of most witnesses who spoke about alcohol was also noted by William A. Potts, "Relation of Alcohol to Feeble-Mindedness," \textit{British Journal of Inebriety} 6 (1909): 144.
alcoholism, tuberculosis, and defective hygienic conditions as the beginnings of the “accumulation of morbid heredity” over the generations. Tredgold contested the assumption that hereditary traits and defects arose as spontaneous variations. In one essay for the Eugenics Review, he referred to the power of the medical profession to prevent degeneracy from being produced anew each generation. Along with marriage restrictions on the existing population of aments, he suggested certain environmental improvements as an even more effective means of checking progressive hereditary decay.

The suggestion has been made that strains exist which have been defective from the very beginning, but this is a view against which several objections may be urged. My own opinion is that unfitness is no mere survival of an original defect, but that it has appeared as something new, as a true variation, and I believe that such pathological germinal variations have been produced in the ancestors of existing degenerate stocks by a pernicious environment. Even now I think there are probably deleterious conditions at work, of which we may not fully be aware, initiating slight germinal changes, which, if unchecked, will eventually culminate in civic unfitness. It follows that improvement of the environment must be an essential factor in racial hygiene; it will prevent unfitness in the future; but the point I desire to insist upon is, that in the case of the majority of the unfit who now exist, environment is a matter of ancient history, the defect is innate and too pronounced to be eradicated by any conceivable attention to nurture, and the only possible means of preventing its spread is by restricting its propagation.

The question of the ultimate causes of hereditary defects had obvious policy implications for the eugenics movement. For soft hereditarians such as Tredgold and Saleeby, the true sources of hereditary or congenital degeneracy were to be attacked through the protection of parents from the racial poisons, along with cessation of parenthood on the

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part of existing unfit stocks. For hard hereditarians such as Pearson, dysgenic traits could be eliminated only by restricting parenthood. This dispute over causation also revolved around one final issue: what constituted complete scientific knowledge about heredity and degeneration. The racial poison theorists insisted that physiological, pathological, and toxicological research was needed to understand the origins of mental and physical degeneracy. Approaches that neglected this biological aspect of heredity and described hereditary variations as merely spontaneous were perceived as being of only limited scientific value. For instance the SSI member William Potts argued along these lines when commenting on the conclusions of the Royal Commission on the Feeble-minded. His criticism might have equally applied to the biometricians’ statistically based research on the relationship between drinking and mental deficiency:

I want to know the cause of a neuropathic inheritance; the heredity must pan out somewhere. Surely we are not going to assume that Cain was neuropathic and Abel not, and that that settles the whole matter for ever. . . . If they don’t tell us how the mental weakness arose, they don’t advance our science much.  

Pearson on the other hand apparently did not consider the origins of heritable variations a question to be resolved with current medical-scientific knowledge. He likely would have been satisfied with Reid’s explanation of degeneracy in terms of the innate tendency of all organisms to vary in their hereditary make-up, in both adaptive and maladaptive directions. This attitude would have been considered mainstream among biologists and geneticists of the day, who largely confined their research on heredity to the laws of transmission rather than its

197Potts, “Relation of Alcohol to Feeble-mindedness,” p. 146. Saleeby echoed these concerns about the “unscientific” conclusions of the Royal Commission in his comments printed after Potts’s paper (pp. 159-61).
physiological mechanisms. Pearson himself never explicitly discussed the question of whether eugenic research ought to investigate the causes of defective germ plasm. It could be argued however that his lack of interest in this question was consistent not only with research trends in genetics, but also with his own phenomenalist philosophy of science, as developed in the 1892 *Grammar of Science*.

According to Pearson’s philosophy, speculation on the underlying and unseen causes of natural phenomena did not belong within the realm of positive scientific inquiry. Science was supposed to involve theory-free description of observables in the form of mathematical laws.\(^{198}\) A good scientific theory had to be able to summarize and predict phenomena, as for instance Galton’s law of ancestral heredity did for the observed facts of inheritance and evolution. The Mendelian theory of heredity, on the other hand, took the further illegitimate step of trying to account for knowable events with unseen physiological mechanisms, namely in the form of the hypothetical entity the gene. As Bernard Norton and Donald MacKenzie have thus contended, Pearson’s phenomenalism likely contributed to or reinforced his scepticism towards the speculative Mendelian theory, while also serving to legitimize the biometricians’ own empirical and mathematical approach to the study of hereditary transmission.\(^{199}\)


\(^{199}\)Ibid., and MacKenzie, “Sociobiologies in Competition: The Biometrician-Mendelian Debate,” pp. 268-70. Norton and MacKenzie argue for the influence of philosophy on Pearson’s scientific theorizing even though his writings themselves supply no direct evidence for such a connection. The same holds true for my own argument about how phenomenalism
Pearson asserted that it was not possible to obtain scientific knowledge about the imperceptible substrata that underlay sense data. Thus he rejected a realist ontology of for example atoms and genes, stating that these were only metaphysical conceptions that should not be projected into the phenomenal world. His sensationalist philosophy was applied specifically to the problem of heredity at one point in the Grammar of Science, when he suggested that scientists should not resort to metaphysical ideas about the causes of resemblance or variation between parent and offspring. The reasons for biological variability were no more amenable to scientific investigation than was “the why of the law of gravitation.” Pearson’s philosophical and methodological pronouncements therefore implied that Mendelians and racial poison theorists both held erroneous ideas about what constituted valid scientific knowledge about heredity. Although he never actually utilized philosophy as a rhetorical resource in the alcoholism and degeneration debate, he might very well have dismissed on phenomenalist grounds Saleeby’s demand that eugenic science consider how hereditary defects originated in the reproductive organs and cells.

Pearson may have condemned theorizing that made claims about “hidden realities” such as the unit of inheritance, but at the same time he recognized that some theories could have instrumental value as devices for describing and predicting observables more efficiently.\(^\text{201}\)

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\(^\text{200}\)Pearson, Grammar of Science, p. 451. Inheritance could only be understood in terms of its empirical laws, and as of the turn of the century these laws still appeared mysterious owing to “our not yet having formed a sufficiently wide or fundamental classification of facts” (p. 334).

\(^\text{201}\)For instance, here is how Norton succinctly describes Pearson’s phenomenalist and instrumentalist viewpoint on the Mendelian theory of the gene: “Theoretical terms were
So for example Weismann's theory of the continuity of the germ plasm was classified on instrumentalist grounds as a valuable “mental conception” that conveniently summarized many of the phenomena of inheritance. In the case of the doctrine of the inheritance of acquired characteristics, on the other hand, Pearson declared that “satisfactory numerical demonstration of its existence is yet wanting.” Thus in addition to questioning the ontological status of the germ plasm or blastophthoric lesions, Pearson could have and in fact did frame his argument against the concept of germ poisoning in terms of its failure as a vehicle for describing sense perceptions: the theory was simply not supported by the available statistical facts.

In the following chapter it will be seen that Saleeby in particular introduced into the debate with Pearson arguments about what kinds of scientific research and theorizing were valid for the study of heredity, variation, and degeneracy. Temperance doctors and Lamarckian eugenists asserted that empirical evidence for the racial poison theory did indeed exist, not only in the data from most social surveys of alcoholic families but also in findings from such fields as experimental physiology, pathology, embryology, and toxicology.

permissible, but only insofar as they were interpretable as a shorthand for longer statements about observables. Pearson did not object in principle to the employment of theoretical terms such as ‘gene’ or ‘atom,’ so long as they were not interpreted as referring to invisible existents. . . . We see, therefore, that in Pearson’s view of the scientific enterprise the only point in introducing theoretical entities such as Mendelian factors into one’s science was to effect a greater economy in the description of nature. There was no reason for supposing that in going to a theoretical level one was thereby discovering something about the hidden realities of nature. In this scheme there were no hidden realities.” Norton, “Biology and Philosophy,” p. 88.

Pearson entirely neglected this laboratory-based work owing not only to his philosophical assumptions and his disdain for temperance science, but also to his deliberate efforts to promote mathematical statistics as a superior method of research in the bio-medical sciences.
IV

TWO STYLES OF EUGENICS: KARL PEARSON AND CALEB SALEEBY

1. "Where to Get Men?"

To this point my narrative has focused on the incommensurable bodies of scientific knowledge and the conflicting policy proposals of the mainline and Lamarckian styles of eugenics that co-existed in Britain before the First World War. Now I turn to two further dimensions of eugenic thought mentioned in Mark Adam's work on international comparisons: the social and professional contexts. My focus in the first half of this chapter will be on certain social ideologies that shaped the British eugenics movement, namely anxieties over national efficiency and universal prejudices against the civic worth and character of the lower social classes. With their similar imperialistic rhetoric and class-based concerns about national fitness, the styles of eugenics advocated by the hard hereditarian Karl Pearson and the soft hereditarian Caleb Saleeby actually had more in common than either man might have liked to admit. Nor in some respects did these eugenic discourses on the degenerate residuum class differ substantially from public health discourses on the problems of infant mortality and the declining vitality of the populace. In fact all of these approaches to social reform arose out of the same sense of crisis that led to the appointment of the 1904 Inter-departmental Committee on Physical Deterioration.

Widespread interest in the question of national health and physique was ignited by an unsigned article entitled "Where to Get Men" that appeared in the Contemporary Review of

1Unfortunately there will not be space here to include an analysis of the gender dimension of eugenic thought, which in Britain was closely related to issues of empire and class.
January 1902. Its author disclosed statistics on the alarmingly high rejection rate among men who had offered themselves for enlistment in the British army during the recent Boer War: as many as 60% of British working-class men had proved physically unfit for military service.\(^2\)

Such vital statistics on the poor quality of soldiers and labourers, compounded by observations of high rates of infant mortality and a rapidly falling birthrate, led many Edwardian social reformers, medical professionals, and politicians to jump to the conclusion that the overall health of the population had declined since the nineteenth century and that this deterioration posed a serious threat to the prosperity of the nation and the very existence of the empire.\(^3\)

The supposedly deficient health and physique of the British race had received so much publicity thanks to the debacles of the South African War that by September 1903 the government was reluctantly compelled to initiate an official inquiry into the matter. The investigation conducted by the Physical Deterioration Committee began with observations of small stature, flat feet, and weak hearts among army recruits, but quickly shifted to even more

\(^2\)The author was soon revealed to be Major General Sir John Frederick Maurice, “Where to Get Men,” *Contemporary Review* 81 (1902): 78-86.

pressing issues of disease, debility, and infant mortality among the estimated six million destitute town-dwellers in Great Britain. In their questioning of expert witnesses, Committee members devoted particular attention to the condition of the infants and children of the urban poor, who represented the next generation of the empire’s soldiers and labourers.

The Conservative Balfour government had appointed low-ranking civil servants, only one of them a medical doctor, to the Physical Deterioration Committee on the expectation that such a group would carry out a perfunctory study and thereby quash any impending sense of crisis. The last thing the government wanted was to discover a problem that would require expensive social welfare programmes to resolve. But instead the Committee returned in 1904 a surprisingly honest report disclosing the dangerously poor physical condition of the British labouring classes. The overwhelming weight of the evidence from almost 70 expert witnesses, including 35 medical men, led to the conclusion that a large proportion of the working-class population fell below some undefined standard of acceptable physical fitness.\footnote{Gilbert, “Health and Politics,” p. 144. The recommendations in the Committee’s Report “were hardly greeted with enthusiasm by the Unionist government,” since they included state interference in the form of the feeding and medical examination of school children, the extension of building and sanitation regulations, and the education of girls and women in domestic duties. Instead it was the Liberals in 1906-7 who finally began to pass social welfare legislation along these lines. Soloway, “Counting the Degenerates,” pp. 147-51.}

\footnote{The government must have genuinely expected this Committee to come to more favourable conclusions. Opinions had previously been solicited from the Royal Colleges of Physicians and Surgeons on the subject of army rejection rates and the condition of the people. In letters that were later published in the Committee’s final Report, both bodies officially responded with scepticism to the suggestion that these problems had progressively worsened in recent decades. Report of the Inter-Departmental Committee on Physical Deterioration, Parliamentary Papers, 1904, XXXII (London: HMSO, 1904), vol. 1, pp. 98-99. Empirical data on the health and physique of recruits during the nineteenth and early twentieth centuries is given by Thomas Jordan, The Degeneracy Crisis and Victorian Youth}
The Committee and most of its medical experts emphasized various environmental causes of poor fitness in offspring, particularly overcrowding, unfavourable conditions of employment, alcoholism, and improper food. They did not pronounce in favour of biological determinist explanations for deteriorating health, and in fact the report concluded definitively that "the influence of heredity in the form of the transmission of any direct taint is not a considerable factor in the production of degenerates." Yet the opinions of the majority of medical and scientific authorities also convinced the Committee that heritable and congenital defects might sometimes come into play where environmental agents such as syphilis or alcoholism were involved. The report thus rejected gloomy hereditarian notions about the inborn inferiority of degenerate individuals or classes, in order to embrace the more optimistic conclusion that the apparent increase in degeneracy could be checked by ameliorating deleterious environmental conditions and lifestyles. The testimony provided by one medical expert, school inspector Alfred Eichholz, epitomized this position:

The point which I desire to emphasize is that our physical degeneracy is produced afresh by each generation, and that there is every chance under reasonable measures of amelioration of restoring our poorest population to a condition of normal physique.

Likewise the Committee itself advised in its final report that even in cases where "the depressing effects of the life-struggle on parents are . . . in some measure transmitted to the


7Ibid., p. 47.

offspring,” reformers and politicians could still take consolation in the knowledge that it would be feasible to work for “the removal of the causes which are prejudicial to the health of each successive generation.” The Physical Deterioration Report thus provided an obvious impetus to the infant welfare campaign and the anti-alcohol movement after the turn of the century, but it was also an important catalyst for the founding of the Eugenics Education Society in 1907. Despite its anti-hereditarian conclusions, the report was commonly read as corroborating popular anxieties about progressive racial decay. Certainly the Committee’s statements regarding the racial poisons were fully consistent with the Lamarckian or preventive style of eugenics. More generally though, it could be said that the eugenics movement directly descended from the physical deterioration crisis in that both centred on the problem of ensuring the vitality of the next generation of the British race. Regardless of the fact that mainline eugenists stressed hereditary rather than environmental sources of degeneracy in offspring, their programme can still be recognised as a response to the same sense of national crisis that gave rise to the Edwardian era programmes for providing a clean milk supply, meals and medical inspections for school children, and education in mothercraft, as well as the contemporary social hygiene campaigns against tuberculosis, venereal disease, and alcoholism.

The critical question on the minds of Edwardian public health doctors, social reformers, and politicians was “where to get men” who would sustain the military and industrial supremacy of the nation, and who would populate the colonies and consolidate the empire as

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9Ibid., vol. 1, p. 46.
a captive market. My first goal in this chapter will be to demonstrate that the distinct styles of eugenics promulgated by Pearson and Saleeby were both inspired by the problematic of rejuvenating the quality and quantity of the labouring population. After that I return to the relationship between the eugenics and public health approaches to ameliorating the health of current and future generations. It will be seen that these supposedly conflicting reform programmes overlapped not only in their class-based problematic but also in many of their policy proposals. More specifically, both focused on the character faults and bad habits of individual parents as the source of most social problems, at the expense of considering the socio-economic reasons for poverty and ill health. In effect, the "environmentalists" associated with either public health or medical eugenics were just as intent as the hereditarians were on improving individuals rather than improving their conditions of life.

Efficiency and Empire

The Boer War aroused the height of imperialist ambitions and jingoism in Great Britain just at the turn of the century. These sentiments were accompanied however by growing apprehensions and mounting evidence of national decadence, especially the perceived physical degeneracy of the people. Edwardian anxieties about ameliorating the "national physique" were founded upon a formula that equated power and prosperity with healthy and strong bodies: public health and eugenic discourses both held that a vigorous working-class population constituted the nation's most important natural resource. The link between

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Edwardian politicians and reformers were anxious about inefficiency not only in manpower resources but also in administration of government, industry, and the military,
national efficiency and the physical condition of the labouring classes was spelled out for instance in this statement by the MP John Burns, president of the Local Government Board and president of the three national conferences on infant mortality:

The bottom of industrial supremacy is the health of the operatives; without that you will have no supremacy. Strong physique, good constitutions, and the sober dispositions of your artisans are the foundation. . . . Industry demands health; and health, I believe, in the main is a maternal gift; it is an infantile legacy; it is a good beginning, the best of all heritages, a sound constitution; for the individual health is a benefit, for the community a blessing, and for the State the greatest satisfaction and the best of all its possessions, powers, and privileges.\textsuperscript{11}

The fitness of Britain’s populace and the efficiency of her government, armed forces, and industry were constantly being compared to the fitness and efficiency of her imperial rivals, especially Germany, Japan, and the United States. Great Britain faced growing commercial and military competition from these larger or more productive nations, some of which had already enacted effective programmes for safeguarding the health of their mothers and children. Thus British propagandists for national efficiency recorded with some concern that in Germany for example the standards of physique for army recruits were higher and the percentage of rejections lower than was the case at home.\textsuperscript{12}

which they felt could be addressed through scientific education and rational planning. The reverses suffered during the Boer War had been due not only to the physical inadequacies of the soldiers themselves but also to blunders in administration and strategy. Hence the British army had required three years and £200 million to defeat an enemy whose total population amounted to only one-fifth the number of British and colonial soldiers sent to South Africa between 1899 and 1902. Searle, \textit{Quest for National Efficiency}, pp. 34-50 and 54-106.


\textsuperscript{12}Smyth, \textit{Physical Deterioration}, p. 22.
Geoffrey Searle has illustrated how the theme of efficiency and empire permeated the writings of Britain's leading eugenists, such as W. C. D. Whetham, F. S. C. Schiller, Arnold White, Francis Galton, and most notably Karl Pearson. Mainline eugenists supposed that the excessively high fertility of biologically and socially inferior stocks would hinder the country's success in the ongoing international struggle for existence. The most famous statement of the imperial significance of racial health was not however associated with the eugenics movement. It was made in November 1900 by Lord Rosebery, the former prime minister and Liberal party leader who reemerged on the political scene during the Boer War as the chief Liberal Imperialist MP:

> An Empire such as ours requires as its first condition an imperial race—a race vigorous and industrious and intrepid. Are we rearing such a race? In the rural districts I trust that we are . . . But in the great cities, in the rookeries and slums which still survive, an imperial race cannot be reared. You can scarcely produce anything in those foul nests of crime and disease but a progeny doomed from its birth to misery and ignominy. . . . Remember, then, that where you promote health and arrest disease, where you convert an unhealthy citizen into a healthy one, where you exercise your authority to promote sanitary conditions and suppress those which are the reverse, you in doing your duty are also working for the Empire. . . . Health of mind and body exalt a nation in the competition of the universe. The survival of the fittest is an absolute truth in the conditions of the modern world.

Lord Rosebery was known as the "spokesman for national efficiency" and the

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“advocate of the Nation.” In the passage just quoted he blamed slum conditions for the deplorable physical and moral state of so many of the nation’s children, and consequently he favoured preventive medicine and hygienic reforms as the primary means of strengthening the race. Yet Rosebery also had a direct connection to the eugenics movement: in 1911 the leaders of the Eugenics Society offered him the presidency of their organization, a position which he and several other candidates declined at that time. The eugenists may have interpreted Rosebery’s rhetoric about a vigorous Imperial race and the survival of the fittest nations as consistent with hereditarian as well as environmentalist programmes for race betterment.

Feminist historians such as Anna Davin and Jane Lewis have similarly drawn attention to the fact that the language of nation and empire was central to both the eugenics and infant welfare movements. In an influential article on “Imperialism and Motherhood,” Davin showed that Edwardian efforts to reduce the fertility of the unfit, save babies, and wipe out syphilis and alcoholism were promoted as “matters of Imperial importance,” justified in terms of patriotic concerns about prosperity and military power. The use of imperialistic language also no doubt reflected a genuine lack of sympathy for the poor and especially for the women of the working classes, whose health and conditions of life were of interest to middle-class meliorists only insofar as these impacted on the welfare of children and the

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15Searle, *Quest for National Efficiency*, pp. 111 and 266.

race. Historians have previously identified Karl Pearson as an influential imperialist and a disciple of national efficiency. Pearson believed that the contributions made by his Laboratory for National Eugenics would help to ensure England's success in the ongoing struggle between nations. His views on empire, race, and national strength were most clearly elucidated in a November 1900 lecture on the topic of National Life from the Standpoint of Science. Here Pearson argued that the maintenance and expansion of the empire were essential to the survival of the nation, since England had become so dependent upon foreign trade and the products of her colonies. Unlike other British social reformers and politicians of the era, he did not shy away from the racialist implications of a policy of imperial expansion. He spoke in no uncertain terms about the rights of European colonizers to

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"drive out the inferior race" and about the destiny of the British race in particular to expand its territory in the name of human progress. He submitted that weaker native races who had proved unable to make sufficiently productive use of their lands deserved to be exterminated: thus he was pleased to note that in America "in place of the red man, contributing practically nothing to the work and thought of the world, we have a great nation" contributing much to the biological and cultural evolution of mankind.\(^{21}\) History had shown that in lands where conquering Europeans had not driven the native inhabitants to extinction, the two groups tended to "naturally sink into the position of master and servant."\(^{22}\)

Conflict between races or nations and suffering on the part of the vanquished, "black as this may seem," were inevitable in Pearson's view of human history. At one point he exhorted his audience to recognize in the laws of heredity and natural selection "a source of progress which produces good through suffering, an infinitely greater good which far outbalances the very obvious pain and evil."\(^{23}\) Yet while conceding that "the path of progress is strewn with the wreck of nations," he concurrently maintained that conflict and misery ought to be eliminated within advanced societies. National efficiency depended upon


\(^{22}\)Ibid., pp. 21-22. Pearson discussed evidence for the supposed low intelligence and high fertility of blacks in his *Social Problems: Their Treatment, Past, Present, and Future*, Questions of the Day and of the Fray V (London: Dulau, 1912). In 1905, his biometrical school also began a study of the relative intelligence, physique, and "cleanliness" of the children of Jewish immigrants. The final results were not published until 1925, and not surprisingly they revealed that Jews were inferior in all respects to Gentile British citizens. Karl Pearson, "The Problem of Alien Immigration into Great Britain, Illustrated by an Examination of Russian and Polish Jewish Children," *Annals of Eugenics* 1 (1925): 5-127.

\(^{23}\)Pearson, *National Life*, pp. 63-64.
neutralizing all internal competition between citizens. The crux of Pearson’s social-imperialist philosophy was the idea that social stability at home was essential for success in the ongoing international or inter-racial competition in the military and commercial realms. He defined himself as a “socialist” but in a rather unconventional sense: for him socialism meant simply a belief that “the direct object of government is to form a stable society” and that all legislation “must ultimately be guided by the aim of increasing national welfare.”

His was thus a conservative rather than revolutionary brand of socialism, which featured racial homogeneity and class harmony in place of class struggle.

Pearson insisted that in order to ensure its continued prosperity the State ought to attempt to foster a sense of “national spirit,” or in other words kinship and patriotism among its citizens. “We must not have class differences and wealth differences and education differences so great within the community that we lose the sense of common interest.”

A statement such as this might seem to imply that Pearson wanted to see a more equitable distribution of wealth and further improvements to working-class conditions of life. But in fact at no time did he make any concrete suggestions for such socialistic improvements. His first priority was always the long-term physical and mental fitness of the race, rather than any idealistic demands for social justice or even concerns about the comfort of the existing

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population. Nor did his call for ameliorating inequalities of wealth and deplorable living conditions necessarily contradict his animosity towards the dysgenic forces of modern medicine, social reform, and indiscriminate charity. Pearson explained that he could not support improvements to the material conditions of life where these were based on blind, unplanned philanthropy, but he would advocate State aid to the sick and needy whenever it was guided by sound eugenic principles.26

The medical writer Caleb Saleeby, Pearson’s main foe in the alcoholism debate, similarly propagandized on behalf of the eugenics cause from a “national point of view.” In his first book on eugenics, published in 1909, Saleeby characterized hereditary improvement of the population as the “business of the patriot.” Yet he was keen to distinguish his own version of patriotism from that of the “brutal, blood-stained Imperialists” such as Pearson, who had in point of fact advocated warfare as a means of weeding out the nation’s unfit and maintaining its internal efficiency.27 Saleeby disliked the militaristic tone too often adopted by patriotic politicians and poets. “We shall preach a New Imperialism,” he proclaimed, one which would downplay the role of warfare in modern society and place greater emphasis on “life.” By this Saleeby simply meant that national power was dependent upon the ability to preserve child-life and to raise a large, robust population—the same formula championed by the mainline eugenics movement. Hence he asserted that “the foundations of any Empire are

26Ibid., p. 56.

living men and women,” and that “the history of nations is determined not on the battlefield but in the nursery, and the battalions which give lasting victory are battalions of babies.”

The Lamarckian eugenist Saleeby clearly shared his mainline colleagues’ anxieties about the welfare of the British nation relative to its major rivals in military and industrial might. This can be further seen in his condemnation of those so-called imperialists who continued to defend the drink trade despite scientific evidence implicating alcohol as a cause of ill health and social problems: he noted sarcastically that these propagandists ought to have been labelled instead “the very littlest of little Englanders.” Saleeby contended that more extensive medical-scientific investigation on the racial poisons was urgently needed because of their “relation to the duration of races and states.” He even presented examples of how the historical development of different nations and ethnic groups had been influenced by their drink habits. For instance, the persistence and intellectual prominence of the Jewish race was said to owe much to their tendency to avoid alcohol, while in future it could be expected that sober peoples such as the Japanese, Chinese, and Turks would enjoy a great advantage in all international competition.

Unlike the social-imperialist Pearson, Saleeby sometimes envisioned the primary objective of the eugenics movement as the “ennoblement of mankind” rather than the improvement of the British people alone. He worried for example that all civilised races,

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nations, or communities were being subjected to the suspension of natural selection and the deleterious effects of the racial poisons. He further argued that true patriots ought to be concerned about the fate of England and her empire mainly because the fall of such a great nation would make the world as a whole a poorer place. He was not at all in sympathy with Pearson's far more parochial definition of eugenics but instead pronounced the movement to be necessarily universal in scope:

It is only in terms of such patriotism that the appeal to love of country is permissible in the advocacy of eugenics, which is a concern for all mankind. . . . The choice for Great Britain today is between national eugenics and the fate of all her Imperial predecessors from Babylon to Spain. The whole book might have been written from this standpoint, but such a book would have been beneath the true eugenic plane, which is not national but human.32

The two types of eugenics described here were thus essentially united in their goal of using the science of heredity to safeguard national power and prosperity. Saleeby may have repudiated the "brutal" form of imperialism and the exclusive nationalism preached by Pearson and other writers, yet he could not escape relying upon the same kind of patriotic rhetoric that was used to justify most Edwardian social reform efforts from mainline eugenics to infant and maternal welfare. Next it will be seen that the schemes for race culture championed by Pearson and Saleeby also exhibited affinities in their assumptions about which sections of the community should be targeted for eugenic management. Saleeby portrayed himself as an opponent of the biometricians' kind of "class eugenics," since unlike them he did not believe in the biological inferiority of the entire industrial class. Nevertheless, his plans for legislation and education pertaining to the racial poisons were

32 Ibid., p. xi.
always intended primarily for the lower social orders, particularly the urban residuum. For instance, whenever he discussed the alcohol problem in its relation to racial health it was strictly working-class drink habits that came under fire. Saleeby also employed charges of class hatred in trying to draw a sharp contrast between “better-dead” eugenics and his own more benevolent version of the eugenic creed. Whereas Pearson and other mainliners were evidently content to sacrifice the lives of the sick and poor in order to ensure the future of the race, Saleeby emphasized how his programme for race culture was fully compatible with efforts to improve the conditions of the poor and especially to rescue their babies.

Class Eugenics

The demographic issue of differential class fertility was one of the central problematics of the British eugenics movement during the first decades of the century. The sharply falling birthrate in England was of special concern to eugenists who observed that the greatest rate of decrease had been occurring amongst the professional classes, while the average family size in the less eugenically desirable industrial classes remained relatively large.\(^33\) Already in 1894, Karl Pearson had taken up the question of the differential birthrate from a statistical perspective, when he calculated that only one quarter of all married couples gave rise to fully half the next generation.\(^34\) Demographic data utilized by some of his students later confirmed

\(^33\)Anxieties about shifting demographic trends were also influential outside of the eugenics movement itself, as the “population question” inspired the 1911 Fertility of Marriage Census and the 1913 National Birth-Rate Commission.

his suspicion that “it is the artizan class which contributes the largest relative number to the population.”  

This meant that the more prudent middle classes were not passing along their superior physique and intelligence to sufficient numbers of offspring to have the effect of uplifting the overall quality of the race.

Mainline eugenics was unquestionably class-centred in that it assumed that biological fitness, mental ability, and civic worth were equated with position in the socio-economic hierarchy. Positive eugenics therefore featured incentives such as maternity allowances and tax advantages designed to encourage members of the middle and upper classes to marry and have larger families. On the other side of the coin, negative eugenic policies targeted members of the working classes, although it was often not entirely clear which segments of that community were considered biologically unfit. Mazumdar’s analysis of the work carried out by the Eugenics Education Society during its first decade identifies the pivotal import of the urban “residuum” class—the unemployed and casually employed who made up the most impoverished and debased 10-20% of the population.  

Mainline eugenists depicted the residuum as a distinct “hereditary class” of undesirables, an interconnected network of undesirables, an interconnected network of undesirables, an interconnected network of undesirables, an interconnected network of undesirables.

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paupers, criminals, drunkards, and mental deficients. These stunted, diseased, anti-social residents of the slums were treated as if they were a biological race apart from the respectable middle classes. In particular, the EES’s Committee on Poor Law Reform and its Research Committee on pauper pedigrees, which together constituted the Society’s main research and policy initiative during the period 1907-1910, focused on the problem of this most destitute and defective subset of the working population. However, not all British eugenists who utilized the vocabulary of national efficiency necessarily shared this exclusive concern with the urban residuum. Here I want to show in particular that Pearson and his biometrical colleagues at the Galton Eugenics Laboratory were ambiguous about which segments of the highly fecund working classes they believed were eugenically unfit.

Pearson presumed that mental ability was the most important measure of social merit, and by this standard he concluded that the labouring classes as a whole came up short. His assumptions about the innate worth of the various classes were laid out most explicitly in this passage from a 1909 Eugenics Laboratory lecture:

If we look upon society as an organic whole, we must assume that class distinctions are not entirely illusory; that certain families pursue definite occupations, because they have a more or less specialized aptitude for them. In a rough sort of way we may safely assume that the industrial classes are

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37 Searle likewise notes that “nothing in eugenic literature is so striking as the way in which working people are frequently discussed as though they were denizens of some other planet.” Searle, *Eugenics and Politics in Britain*, p. 59.

not on the average as intelligent as the professional classes and that the distinction is not entirely one of education.\textsuperscript{39}

This passage illustrates Pearson's obvious contempt for the men of the industrial classes, whom he believed to be intellectually inferior to his peers in the professional ranks and therefore suited only to relatively menial roles as manual labourers. Given that social and occupational status were circumscribed by hereditary aptitude, there could be no expectation that individuals born into the lower social ranks would ever be able to move up the social ladder or succeed in business, science, or the professions.\textsuperscript{40}

Pearson further seemed to condemn the entire working class population for its relatively high rate of fertility. As he put the argument, eugenists had to be concerned about the fact that "society recruits itself from below, the rate of reproduction of the industrial classes being 30\% greater than that of the professional classes."\textsuperscript{41} It should be noted however that this statement about class fertility was uttered in the context of a longer discussion of the need to reproduce more middle-class "brain workers" whose job it would be to run the country efficiently. According to Pearson, national eugenics had two equally important, class-based objectives: to replenish the "great army of workers" and to ensure the production of a


\textsuperscript{40}In an earlier essay Pearson had argued for instance that lower-class men who received some degree of higher scientific training had little hope of becoming brilliant scientists, although such training might still benefit society by producing a larger supply of workers "with increased intelligence and more highly developed craftsmanship." Karl Pearson, \textit{The Function of Science in the Modern State}, 2nd edn., Eugenics Laboratory Lecture XII (1902; Cambridge UP, 1919), pp. 8-20.

"sufficient supply of leaders of ability and energy for the community." His invective against the relatively prolific labouring classes was thus intended not only to denigrate their eugenic worth but also to call attention to the alarmingly low birthrate of the equally essential technocratic class of scientists, managers, and statesmen.

In other publications Pearson's biometricians similarly left themselves open to charges that they were "setting class against class." In particular, a 1906 study of relative fertility in the classes versus the masses, which was written by the Eugenics Laboratory's Research Fellow David Heron, seemed to insinuate that the labouring classes as a whole constituted a dysgenic problem group. Heron purported to have proved statistically that larger family size was closely correlated with "conditions which mark poverty, disease, or generally unhealthy and improvident surroundings." His procedure involved comparing families in London’s poorest and most unhealthy districts with those in neighborhoods that contained the highest proportion of professional men. What he referred to as the "mentally and physically feeble stocks" of English society were thus shown to be out-reproducing the fitter stocks at the other end of the social scale. This conclusion led to accusations of class prejudice because Heron had failed to specify whether he believed negative eugenics ought to be applied only to the most destitute members of the community or to the working classes in general.

In 1913 Pearson directed several of his colleagues and students to undertake a second

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44Heron, Relation of Fertility in Man to Social Status, p. 3.
statistical investigation into fertility and social value, in the hopes of finally dispelling all charges that his brand of eugenics was "full of class bias."" The authors of this memoir insisted that they had eliminated all traces of class bias by confining their attention to one social stratum only: they compared the family sizes of destitute versus respectable sections of the working classes, while leaving the middle classes out of the equation entirely. This time their conclusions referred specifically to the members of the residuum, who were found to have a higher birthrate than the relatively prosperous and prudent artisans.

The best members of that class have not the greater fertility, and where we should hope—for the sake of national welfare—that the more skilled, the more highly paid and the healthier had markedly the larger families . . . [instead] we find negative correlations.46

The biometricians therefore recommended that eugenic policies be designed both to reduce the excessive fertility of the degenerate class of paupers, criminals, and the feebleminded, and to provide economic incentives for the fitter members of the working class to have more children.47

Although Pearson's intent may have been to target the poorest, most thriftless, and most degenerate portions of the community for negative eugenics, it is easy to see how his various studies and pronouncements on the biological worth of the lower classes could have been interpreted otherwise by his contemporaries. None of his efforts to repudiate accusations of class prejudice, such as that presented in the 1913 memoir on differential fertility, proved at

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45Elderton, et al., On the Correlation of Fertility with Social Value, p. 42.
46Ibid., p. 5.
47Ibid., pp. 26-27 and 44-46; see also Pearson, Problem of Practical Eugenics, p. 31.
all persuasive. Instead Pearson's work seemed to suggest that two kinds of differential birthrate threatened to enfeeble the race: that between the artizans and the residuum, and that between the middle and lower classes. He unquestionably believed that the working classes as a whole were inferior in physical fitness and especially intellectual ability to their social betters, and it was this aspect of his class-based eugenics that proved most controversial, even among some of his fellow eugenists. Saleeby in particular took exception to Pearson's assumption of working-class inferiority and his attempts to rationalize existing social and economic inequalities in biological terms.

In an influential article on the social construction of British eugenics, Donald MacKenzie characterized Pearsonian eugenics as principally a defence of professional middle-class interests. Pearson was concerned to legitimize and enhance the social position of scientific experts by using biological determinist arguments about the superior intellectual abilities of the middle classes as compared to both the aristocracy and the workers. On the other hand, such "pure" class considerations were definitely not a foremost concern of Pearson's adversary Caleb Saleeby as he formulated his own unique eugenic creed. Saleeby denounced the kind of "class eugenics" preached by many of his colleagues in the British

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48 One such declaimer came in the closing remarks of the 1913 memoir: "There is no real evidence here of 'class' prejudice. . . . The 'class' divisions of good health and bad health, of ability and stupidity, are not purely horizontal dichotomies in the social sense." Elderton, et al., *On the Correlation of Fertility with Social Status*, p. 43.

49 At one point Pearson even stated that eugenists ought to use the same statistical methods to examine the relative fertility of the masses *versus* the classes as they used to study the fertility of the various intellectual grades and hereditary degenerates. Pearson, *Groundwork of Eugenics*, p. 35.

eugenics movement on the grounds that it served to impede social mobility and to justify unethical social policies. Whereas Pearson and many other prominent eugenists desired a naturalistic explanation for class distinctions, Saleeby declared it “ludicrous” that “we should be asked to swallow wholesale generalizations about such infinitely heterogeneous aggregates of individuals as social classes.” Elitist eugenists “ask us to accept [some] social classes and to reject others on eugenic grounds,” when in reality fitness and unfitness—good and bad germ plasm—could be found at all levels of the social hierarchy.

Elsewhere Saleeby maintained that it was simply wrong to assume that the masses contained an especially high percentage of hereditary degenerates. The underdeveloped bodies and minds so often found among the labouring classes were not necessarily due to their genetic make-up, but rather to unfavourable conditions of life. Saleeby even argued that working-class stock was by and large robust, as demonstrated by the good health observed in at least 90% of all slum-born infants.

It is under the influence of such considerations that the present writer, for one, is somewhat chary of predictions and proposals based upon the relative fertility of different classes of the community or of the masses as compared

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51Saleeby’s superior tone on the subject of social class and his disapproving attitude towards the “brutal creed” of class eugenics likely go far towards accounting for why his fellow eugenists refused to re-elect him to the EES Council in 1910.

52Caleb Saleeby, *The Progress of Eugenics* (London: Cassell, 1914), pp. 163-64 and 177. The overall positive attitude towards the working classes expressed in this book likely resulted from its origin as a course of popular lectures Saleeby gave for the Royal Institution. He did nonetheless make similar arguments against class eugenics in other publications as well.

53Ibid., p. 39. “It was and is impossible to disentangle the influence of heredity, and that of the superior nutrition, sleep, air, light, education, traditions, [and] opportunities” available to the well-to-do classes.
with the classes. Directly as the eugenist begins to talk in terms of social classes... he is skating on thin ice."^54

Worthiness for parenthood could not simply be equated with social status, since in reality "the eugenic classification of mankind cuts right across the ordinary social classification."^55

If indeed ability were distributed equally throughout the community, then a strategy of recruiting the future population disproportionately from the more affluent classes would never pay off from a eugenic perspective. Saleeby likewise pronounced that social ills such as crime and pauperism could not be presumed to have a basis in genetic inferiorities. The pauper pedigrees collected by E. J. Lidbetter and his EES colleagues were thus dismissed contemptuously for making the science of eugenics look "ridiculous." These pedigrees provided no solid evidence that such traits as criminality, alcoholism, feeblemindedness, or pauperism were inherent in lower-class stocks.^56

Mainline eugenists were also condemned by Saleeby for presuming that members of the labouring classes were unworthy of being rescued from their often grim circumstances of life. Those he labelled the better-dead or "Nietzschean" eugenists were said to be kindling class hatred with their apparent indifference towards infant mortality and the suffering of the poor and unfit. With his scheme of preventive eugenics, Saleeby aspired to find a middle ground

^54Saleeby, Parenthood and Race Culture, p. 118.

^55Ibid., p. 135.

^56Saleeby, Progress of Eugenics, pp. 218 and 210. It should however be noted that Saleeby was not consistently sceptical of hereditary explanations for pauperism. For instance he suggested in an earlier publication that "some by no means small proportion of the unemployed" owed their situation to inherited defect. Saleeby, Parenthood and Race Culture, p. 340.
between the total lack of compassion associated with negative eugenics and the humanitarian impulse for indiscriminate charity and State aid that too often facilitated the propagation of unfit germ plasm.\(^{57}\) He appealed over and over again in his 1909 book *Parenthood and Race Culture* to a vague "law of love," which seemed to refer simply to his programme for improving the race by caring for the sick and disadvantaged rather than allowing them to perish for the greater good.

The moral law, and our natural human sympathy, insist that we should seek to preserve all the children that come into world, to amplify the health of the unhealthy, and to neutralize, as far as possible, the unfitness of the unfit.\(^{58}\)

During his few short years of hospital practice in Edinburgh and York, Saleeby had acquired some experience administering to slum populations and this first-hand knowledge may well have made him more sympathetic to the plight of the poor than were his mainline colleagues such as Pearson and the Whethams. However, it seems likely that his attacks on the class dimensions of mainline negative eugenics were intended primarily as another way of demarcating his own preventive programme of race regeneration. What Saleeby referred to as the "perverted," "brutal," or "odious and contemptible" form of eugenics supposedly used to defend infanticide, child neglect, and alcohol abuse was in reality little more than a straw man, set up to be contrasted with his own relatively benign form of eugenics.\(^{59}\) As I noted in

\(^{57}\)Saleeby, *Parenthood and Race Culture*, pp. 30-32.

\(^{58}\)Ibid., p. 27.

\(^{59}\)Ibid., pp. 24 and 27. Archdall Reid was one of the writers that Saleeby accused of advocating better-dead eugenics (in this case perhaps justly), for instance in "The Fratricide Biology," *New Statesman* 4 (1915): 556-57, and in another essay on the topic of eradicating measles. An outraged Reid pointed out in response that he and other eugenists had never called for the destruction of the unfit, but rather the implementation of artificial selection to
Chapter I, few if any British writers defended a true better-dead version of eugenics which called for the destruction of unhealthy infants and hereditary defectives for the sake of the race.

Saleeby did nonetheless have a valid complaint that mainline eugenists used their “brutal creed” as a means of controlling the lower social orders and furthering their own financial interests. As Saleeby put the argument, since the middle class was always concerned “to keep its money in its pocket and its power over the poor,” an ideology that opposed alleviating lower-class conditions of life represented “a new buttress for the selfish and materially fortunate members of society.” Hard hereditary eugenics implied that the more fortunate members of society need not spend money helping the poor if these people were indeed irredeemable, or if “increased attention to the needs, especially the children’s needs, of the ‘lower classes’ means national degeneration.” Pearsonian eugenics was thus denounced for opposing reforms that would aid the sick and poor or rescue lower-class babies and mothers. Yet as will be seen in the next section, Saleeby himself was not much more favourable to expensive social welfare measures and instead promoted more

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G. Archdall Reid, “Measles,” New Statesman 6 (1915): 108-9. Saleeby himself at an early stage in his career as a science and medical writer had made statements that he later might have condemned as falling within the better-dead mould. Writing in 1905 for instance, he had cautioned against indiscriminate charity and social reform as “modern doctrines and practices [that] tend towards the most unwise and disastrous limitation of the action of natural selection.” Caleb Saleeby, Heredity (London: Jack’s Scientific Series, 1905), p. 103.


Saleeby, Progress of Eugenics, p. 38.
conservative educational means of protecting parents and children from the sources of degeneration.

In fact it could be argued that Saleeby’s ideas about national and racial decay were just as class-centred as were Pearson’s. Although Saleeby was usually much more careful not to implicate any one segment of the community as the principal locus of degeneracy, like all British eugenists he dealt far more extensively with social problems specific to the residuum class than with heritable conditions that afflicted individuals at all levels of the social hierarchy, such as deafness or epilepsy. When he wrote about the eugenic significance of drunkenness, crime, feeblemindedness, or infant mortality, it was always in reference to the labouring and residuum populations. One example of Saleeby’s class prejudices was the way he repeatedly portrayed the lower-class feebleminded and inebriate girl as the archetypal hereditary degenerate.62 He agreed with orthodox medical and eugenic opinion which said that the feebleminded were born rather than made and therefore advocated their permanent segregation in asylums or reformatories to prevent them from procreating their kind. But this scheme referred mainly to mentally deficient individuals who came from working-class families. Whereas wealthier families would be able to provide adequate protection and supervision at home for such individuals throughout their lives, poorer parents needed to entrust this duty to the State. Their feebleminded offspring too often wound up as prostitutes, criminals, and alcoholics—burdens on society who were continuously being shuttled between

"pavement, police-court, [and] prison."\footnote{Saleeby, "Obstacles to Eugenics," p. 234.} It was therefore in their own best interests, as well as the interests of future racial health, that lower-class mental defectives be permanently segregated from the rest of society.

Saleeby’s experience serving on the National Birth-Rate Commission during the period 1913-16 seemed to move him closer in yet another respect to the class biases of mainstream eugenic discourses: his publications after this point included discussion of the issue of differential class fertility.\footnote{The Birth-Rate Commission was a subcommittee of a reform society called the National Council of Public Morals and not a government commission. Its mandate was to collect demographic data on changing fertility patterns and to evaluate possible causes and effects of a declining birthrate. In addition to Saleeby, several other prominent EES members also belonged to the Commission. Mazumdar, \textit{Eugenics, Human Genetics and Human Failings}, pp. 46-48.} Vital statistics utilized by the Birth-Rate Commission (which had originally been collected by the Eugenics Laboratory) demonstrated that higher income families were not reproducing at the same rate as the poor, whom Saleeby now referred to as the “super-fertile” members of the industrial class.\footnote{Caleb Saleeby, “The Birth-Rate Commission,” \textit{New Statesman} 2 (1913): 170-71.} He noted in a later publication that “the educated, responsible, successful, provident, sober members of the community,” who constituted “the backbone of the nation,” were not replenishing their numbers and were thereby worsening the average physique and intelligence of the population.\footnote{Caleb Saleeby, \textit{The Eugenic Prospect: National and Racial} (London: T. Fisher Unwin, 1921), pp. 27-28 and 32-33.} Thus despite his criticisms of the proponents of class eugenics, Saleeby eventually found himself virtually echoing their assumptions about the relative eugenic worth of the classes \textit{versus} the masses.
Saleeby did however supply a non-hereditarian explanation for class differences in overall fitness and physique. He agreed with mainline eugenists that couples from the more privileged social strata were generally less likely to carry heritable defects than were working-class stocks. But his aversion to biological determinist accounts of social distinctions and his belief in the external origins of degeneracy led him to insist that the superior health of middle-class offspring was due mainly to the quality of the environment in which they had been raised, which included not only better food and housing conditions but also lower risk of exposure to the racial poisons. In later writings Saleeby accordingly expressed a familiar-sounding desire to see more children born to more affluent Hampstead and South Kensington families, lest the next generation of the Imperial race be recruited too heavily from parents in less desirable districts such as North Kensington. The children of the latter group might not be genetically unfit, but they were more likely to be enfeebled owing to the wretched conditions into which they had been born. Such notions amounted to an environmentalist version of the same antipathy towards the industrial classes found in the work of the biometricians and the EES, with their statistical analyses of fertility patterns and research on pauper pedigrees.

In sum, then, it would seem fair to say that Saleeby never entirely succeeded in purging class prejudices from his own eugenic propaganda and policies, despite his assertions to the contrary. Although he pleaded with his eugenic colleagues to recognize the genetic worth of all social classes, he could still sometimes sound exactly like them in his open disdain for the

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thriftless and deformed products of the urban slums. He recalled for example one visit he made to Hyde Park around the beginning of the First World War, when he noted the stark contrast between a group of “splendid boys” who had recently enlisted and another group of tramps and ne’er-do-wells, the broken-down, tuberculous, rickety, alcoholic, and syphilitic, who breathed the same air, and loafed, or mostly lay, upon the same grass. Some of them had been rejected by the recruiting doctors; many never applied, knowing well that they would be refused; most, I fancy, had never applied, lest they should be accepted. 68

Thus even someone as sensitive to accusations of bias as Saleeby could muster little compassion for those members of the community who belonged to the degenerate residuum class. This self-described champion of the poor and enemy of the “Nietzschean eugenists” may not have shared the open class contempt and snobbery of the biometricians and many leaders of the EES, yet his work addressed the very same class-based problematic of the urban poor. Both negative and preventive eugenics focused exclusively on the fitness and behaviour of individuals from the lower social orders, while disregarding the racial importance of hereditary disease, mental deficiency, and alcoholism in the middle and upper classes.

The Personal Factor in Eugenics and Public Health

Caleb Saleeby’s relatively progressive stance on class dynamics did not arise from any left-wing predilections. At no point did he identify himself as a socialist, although for many years he was informally connected with the socialist Fabian Society as a regular contributor.

68 Saleeby, Eugenic Prospect, p. 65.
to the journal *New Statesman*. When addressing the subject of political affiliation, Saleeby claimed to have no use for party politics and advised his fellow eugenists to avoid getting involved in such matters until some "thinking party" finally came along that recognized the vital importance of race culture. Saleeby did indeed support such progressive State programmes as better maternity care, medical inspection of schoolchildren, and sanitary and housing improvements. But to label him a socialist or to suggest that he self-identified as a supporter of radical politics simply because he believed in "a eugenics that insisted upon extensive social reform" would be incorrect. Such a view not only fails to recognize Saleeby's ambivalence towards socialism, but more importantly it misrepresents the overall political tenor of preventive eugenics and other Edwardian campaigns for combatting infant mortality, physical deterioration, and racial decay. This section will therefore describe Saleeby's style of eugenics as a relatively conservative doctrine, one which mimicked both

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70 Saleeby, *Parenthood and Race Culture*, pp. 134-35. "I would call myself neither a socialist nor an anti-socialist, but if the labels are necessary, a eugenist and maternalist" (p. 225). As a convinced hereditarian, Saleeby stated that he disagreed with socialism when "it assumes that all evil is of economic or of educational origin" (p. 151). But at the same time he also speculated that a socialistic system in which all distinctions of social status and wealth had been eliminated might serve to maximize the chances of race progress, by allowing women to choose their mates solely on the basis of innate skills and habits (pp. 225-30). In most of his books and articles he devoted at least a few paragraphs to the complex relationship between socialism and eugenics.

hard hereditarian eugenics and public health in its individualistic approach to social reform.

Social activists from across the political spectrum and from diverse reform movements supported some degree of State interference in the lives of poor families. However, their demands for reform or intervention did not typically include much in the way of material or financial assistance, as would be expected from a socialistic agenda based on demands for economic equality and social justice. The environmentalist reformers, public health doctors, and eugenists I discuss here never seriously considered remedying what was certainly the ultimate cause of hardship and sickness among women and children of the working classes, namely low wages.\(^7\) In fact they were generally wary of too much direct State assistance to the impoverished, fearing the demoralization of families and the further disintegration of conventional gender roles. Most Edwardian social reform efforts were instead based upon the principal of cultivating parental responsibility. They urged that the State not be allowed to usurp the natural duty of the father to provide for his own family or discourage the mother from remaining in the home and tending to her own children. It was frequently stated for example that philanthropic and municipally supported programmes supplying meals for mothers, sterilized milk, day nurseries, or maternity benefits only served to undermine the sense of individual responsibility and perhaps even worsen the infant deathrate. As Saleeby cautioned in one memorable passage, “there is no State womb, there are no State breasts,

\(^7\)Working people themselves had no doubt that economics mattered most and that the health of their families would be dramatically improved if only male and female breadwinners were able to earn a better wage. On the perceptions and experiences of working-class women, an excellent published source is the collection of letters written for the Women’s Cooperative Guild project in 1914. Margaret Llewelyn Davies, ed., Maternity: Letters from Working Women (1915; London: Virago, 1978).
there is no real substitute for the beautiful reality of individual motherhood.” Such statements supporting education of parents and self-help rather than material aid were also typical of the infant welfare crusade:

You cannot supercede the mother. . . . Do everything you can within your power to instruct her, to educate her, and to persuade her how best to look after herself, and safeguard her offspring, but do not by over-attention paralyse her initiative, her capacity, and her volition to do as a mother what every mother ought to be able to do for herself. 74

The first decade of the century saw the implementation in Britain of limited welfare services for pregnant women, babies, and school children. But as historians such as John Eyler have noted, the very same medical officers who introduced these policies also maintained a strong faith in the primacy of reforming individual behaviour. 75 Histories of

73 Caleb Saleeby, “The Human Mother,” Report of the Proceedings of the National Conference on Infantile Mortality (Westminster: P. S. King, 1908), p. 32. Hereafter referred to as the Second National Conference on Infant Mortality. Early in his career Saleeby had lectured on behalf of an extremely conservative organization called the British Constitutional Association, the professed goals of which were to limit government and to oppose “collectivist measures for curbing the individual in the supposed interest of the many.” In these lectures he defended an individualistic notion of parental responsibility, objecting that State-sponsored education and care of children tended to weaken the parental role and the “stability of the family.” Collectivist measures such as school breakfasts and milk depots could be tolerated for the time being, but only if able parents were obliged to pay for such services. Caleb Saleeby, Individualism and Collectivism: Four Lectures (London: Williams and Norgate, 1906), pp. vii and 51-62.


75 Eyler demonstrates that the work of Arthur Newsholme, head of the national public health service during this period, was always driven by an individualistic approach to health reform: “changes in conviction among those providing the new public services were less swift and conclusive than the change in policy.” John Eyler, “The Sick Poor and the State: Arthur Newsholme on Poverty, Disease and Responsibility,” in C. Rosenberg and J. Golden, eds., Framing Disease: Studies in Cultural History (New Brunswick: Rutgers UP, 1992), p.
British social medicine generally concur that by the turn of the twentieth century social diseases had come to be defined largely in individual and biological terms, rather than social and environmental. Throughout the nineteenth century, public health policy had emphasized the influence of "environmental hygiene" on rates of morbidity and mortality. But by the first decade of the new century this emphasis on sanitary engineering and housing inspection had given way to a new orientation towards "personal health services" that would supplement ongoing efforts to clean up the urban centres. Such services were to include treatment, education, medical inspection, and management of sick and deviant individuals. As one early-century medical writer described this shift in emphasis, "the old public health was concerned with the environment; the new is concerned with the individual."77

The new strategy was exemplified in the recommendations of the 1904 Physical Deterioration Report. The Report strongly favoured the opinion that despite marked improvements in lower-class wages and conditions of life over the past few decades, the physical fitness and the standard of living of the workers had not increased accordingly.


Available resources were presumably not being spent wisely by those large segments of the working classes in which there has not been developed a desire for improvement commensurate with the opportunities offered to them. Laziness, want of thrift, ignorance of household management, and particularly of the choice and preparation of food, filth, indifference to parental obligations, drunkenness, largely infect adults of both sexes, and press with terrible severity upon their children.  

Throughout the testimony and conclusions of the Report, personal failings or character flaws assumed to be typical of the residuum class, such as laziness, ignorance, and drunkenness, were blamed for the perceived crisis of racial degeneration. To arrest further national decay it would not be necessary or sufficient to “rely upon any large measure of legislative assistance.” Instead the Committee asserted that “the pathway to improvement lies in another direction,” namely the education of parents and future parents. The Report opened with a description of the overcrowded, unsanitary conditions of town life as a source of degeneracy in offspring, but then went on to identify as much more crucial a series of problems associated with bad parenting, such as alcoholism and inadequate diet. Thus the general remedial measure recommended for the crisis of physical deterioration was “some great scheme of social education . . . by which the people themselves must be induced to cast off the paralysing traditions of helplessness and despair.”

The Edwardian infant welfare crusade similarly devoted nearly exclusive attention to individual character faults as the cause of the appalling wastage of child life in slum

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79 Ibid., pp. 93 and 57.
populations, while downplaying the importance of noxious environmental conditions and extreme destitution. For instance, the nation’s two chief public health officials, Arthur Newsholme and George Newman, both concluded in their reports on infant and child mortality “that something much more than improvement of environment was necessary to the solution of these problems,” and that this something was attention to the domestic life of the poor. Some doctors and reformers did acknowledge that a small percentage of all infant fatalities might be due to what they called primary or unavoidable poverty, which resulted from temporary unemployment or low wages. On the other hand, those working-class families who earned a decent income but wasted much of it on improper food and drink were said to be mired in secondary or voluntary poverty. In such cases pauperism and poor health had presumably resulted from ignorance or destructive behaviours such as improvidence and alcoholism. It was assumed that to supply such families with better wages or free services would only worsen their situation.

80 George Newman, The Building of the Nation’s Health (London: Macmillan, 1939), p. 287, summarizing his colleague Arthur Newsholme’s work on infant mortality. Newsholme acted from 1908 to 1919 as the effective head of the British public health service in his role as Medical Officer of the Local Government Board; Newman was the Chief Medical Officer of the Board of Education from 1907 to 1935, and became first Medical Officer to the Ministry of Health in 1919.

81 According to at least one experienced health visitor, the effects of primary poverty on women and children could be countered by better organizing the distribution of food and advice to needy families, encouraging employers to pay for maternity leaves, and implementing programmes for the training of midwives. Marguerite Le F. Boileau, “The Best Means of Helping the Mother Below the Poverty Line,” Second National Conference on Infant Mortality, pp. 113-38.

82 The primary/secondary distinction was made for example by the MOH Newsholme. See Eyler, “Sick Poor and the State,” pp. 287-88.
Authorities on infant welfare were soon able to cite definitive evidence for their belief that high rates of infant mortality and physical deterioration were caused by bad habits and incompetent parenthood rather than by an unwholesome environment and economic hardship. In 1907 the Liverpool medical officer of health E. W. Hope published the results of his large-scale sociological inquiry into infant mortality in that city. Hope’s vital statistics revealed that individual families living in the same impoverished districts experienced extreme disparities in the numbers of children lost. He found that in 874 of these families almost half the infants had perished, while another 50 families living side by side with the former group “under similar conditions, with the same income, following the same occupations, the same hard struggle against poverty, had [successfully] reared all or nearly all of their children.”

Many of the fitter families in Hope’s sample happened to be Jewish immigrants. Their low rate of infant deaths was ascribed to the sobriety and thriftiness of the parents, and especially to the tendency of the mothers to forego outside employment in order to stay home nursing and caring for their children. Reference to the laudable habits and domestic skills of Jewish parents became a stock argument in the literature of the child welfare, anti-alcohol,

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84Another study by Dr. James Niven in Manchester produced similar findings: a predominantly Jewish district was found to have an infant mortality rate of 115 per 1000, as opposed to 184 for the rest of the city. Reported in Newsholme, Fifty Years in Public Health, p. 376. See also David Gutzke, “The Cry of the Children: The Edwardian Medical Campaign Against Maternal Drinking,” British Journal of Addiction 79 (1984): 72-73.
and eugenics movements. Saleeby for example used the case of the "survival of the Jews" to defend the value of both negative and preventive eugenics.\textsuperscript{85} He contended that through centuries of persecution and repression the Jewish race had faced stringent selection pressures which presumably left only the strongest specimens to survive and procreate. Moreover, the race had been little harmed by infant mortality or acquired degeneracy owing to the abstemious habits of Jewish mothers and their devotion to their children. Social reformers and doctors thus hoped to see the native-born British working classes emulate the clean living and gendered division of labour typical of these Eastern European immigrants. The idealized Jewish mother was to serve as a model for the rest of Britain's female population. However, this limited degree of acceptance and praise certainly could not offset the more widespread anti-Semitism of British society, which was even expressed by Saleeby himself in one discussion of the superior health of the Jews:

\textit{The reader is not necessarily asked to admire them or to like them or to speak well of them, but if he desires the strength and continuance of whatever race or nation he belongs to, he will do well to imitate them.}\textsuperscript{86}

The Jewish population living in London's East End did in fact experience lower rates of

\textsuperscript{85}Saleeby, \textit{Parenthood and Race Culture}, pp. 315-17. Testimony on Jewish dietary habits, maternity care, and breast feeding practices was also supplied to the Physical Deterioration Committee.

\textsuperscript{86}Caleb Saleeby, \textit{Woman and Womanhood: A Search for Principles} (London: Mitchell Kennerley, 1911), p. 385. Jewish mothers may have been praised for fulfilling their responsibilities to family and home, but at the same time Eastern European Jewish immigrants were commonly stigmatized as unclean bearers of disease who threatened to worsen the health of the British population. This contradiction is briefly mentioned by Lara Marks, \textit{Model Mothers: Jewish Mothers and Maternity Provision in East London, 1870-1939} (Oxford: Clarendon, 1994), p. 43.
infant fatalities than did their Gentile neighbours, despite their impoverished, overcrowded living conditions and the special disadvantages they faced as an ethnic minority.\(^7\) Lara Marks has recently suggested that this remarkable phenomenon likely owed much to "religious and cultural traditions concerning food and its preparation," as well as to effective family and community support networks for maternity care.\(^8\) For Edwardian activists on the other hand, infant deaths were invariably assumed to be linked to "maternal inefficiency" or other parental failings. The existence of numerous poor yet relatively healthy Jewish families thus seemed to justify an emphasis on reforming the behaviour of individual parents as the best means of ensuring a fit population. The cultivation of public health and racial fitness did not require costly aid to families or alleviation of urban conditions of life, but instead could be achieved simply by attending to what the medical officer Hope called the "personal factor."\(^9\)

Edwardian social medicine and social reform efforts therefore concentrated on managing the health and behaviour of individual citizens, primarily through educative measures understood to be politically uncontroversial and relatively easy and inexpensive to

\(^7\)Comparative statistics on infant mortality for predominantly Jewish versus non-Jewish districts of East London have been generated by Marks, *Model Mothers*, pp. 45-52.

\(^8\)*Ibid.*, pp. 69 and 74. Marks argues that differences in breast feeding practices were not the reason that Jewish mothers lost fewer children. She has not however found any evidence either confirming or repudiating contemporary claims that Jewish women were employed outside the home less often or that their households spent less money on beer than did other East End residents.

implement. Medical professionals came to believe that most social ills were produced by such individual failings as lack of personal cleanliness, poor choice of diet, ignorance, moral weakness, and alcohol abuse. Thus for instance the campaigns against infant mortality and physical deterioration relied heavily upon schemes for "mothercraft," or instruction of girls and young mothers in cooking, housekeeping, and the virtues of breast feeding. "Personal health services" also encompassed the medical inspection of lower-class children in the home, at infant welfare centres, and in the schools, while professional and volunteer health care workers visited the residences of the poor in order to dispense advice on health care, diet, child rearing, and other factors that influenced the welfare of the family.

All of these child and maternal welfare policies were also classified as techniques of the early-century "social hygiene" movement, which entailed regulating individual behaviour and social interactions as a means of curing and preventing social ills. In the British context the term social hygiene most often referred to programmes for the treatment and surveillance of infectious diseases, especially tuberculosis and syphilis. But Greta Jones has argued that

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90 As Jane Lewis suggests, "education programmes were attractive because they were cheap and could be implemented quickly with some hope that immediate improvement would result. They also had the advantage of avoiding the political controversy that was bound to be raised by any offer of economic assistance." Lewis, Politics of Motherhood, p. 220. This conclusion is echoed in Deborah Dwork's history of the infant welfare crusade: "It was easier to teach cookery, hygiene, and domestic economy to women and girls, to advise physical exercise for children of both sexes; it was even easier to provide health visiting of infants and sterilized milk for them, than to address radically the causes which made all of this necessary: to improve wages, housing, and the terms of employment." Dwork, War is Good for Babies, p. 19.

91 On social hygiene as a surveillance technique see Armstrong, Political Anatomy of the Body, pp. 10-15.
during the first half of the century social hygiene had yet another meaning for a wide range of reformers and doctors concerned about "halting the rising tide of degeneracy." These social hygienists stressed hereditary explanations of many medical and social pathologies, while favouring new techniques of "social management" intended to regulate the birth rates of the fit and unfit. Along with institutionalization for eugenic ends, social hygiene also encompassed measures utilized by public health doctors such as "medical inspection, control, regulation, [and] instruction" of children and parents. According to Jones, these methods of regulating the behaviour of individuals represented a popular alternative to "more familiar" social welfare legislation until the rise of the welfare state in the 1940s. Her picture of a broadly defined social hygiene movement which offered alternatives to collectivist reforms

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92 Jones asserts that social hygiene encompassed "the whole area of the comprehensive and intrusive attention to all that pertains to human biological (and mental) well-being." But in fact she identifies only a handful of British writers (including the eugenists Havelock Ellis, J. Arthur Thomson, and Elizabeth Sloan Chesser) who used this term in the same sweeping fashion as did the German social hygienist Alfred Grotjahn. Greta Jones, *Social Hygiene in Twentieth-Century Britain* (London: Croom Helm, 1986), pp. 1 and 25-26.

93 Jones states that the main point of her work is to identify "the exact importance and extent of hereditary ideas and the reason for their emergence" in several areas of public health, particularly the control of mental deficiency and venereal diseases. *Ibid.*, p. 8. By contrast, my goal is to illustrate how pervasive non-hereditary ideas were in eugenic discourses on alcoholism, feeblemindedness, and VD. Despite our diametrically opposed perspectives on this network of social reform organizations, Jones’s argument and mine lead to the same general conclusion that eugenics and public health had far more in common than is usually recognized.

94 *Ibid.*, pp. 2 and 17. Despite their shared emphasis on individualism and personal factors, social hygiene and eugenics were seen as relatively "progressive" social reform movements owing to their reliance on scientific expertise and state intervention. This image was finally dashed by the economic depression and high unemployment of the 1930s, which "sharpened the distinctions . . . between those who believed in economic equality and major social reconstruction and those who did not" (p. 146).
thus coincides with my own argument about how individualistic approaches to ameliorating the health of current and future generations predominated in Edwardian medical circles.

Like the public health, infant welfare, and social hygiene campaigns, the eugenics movement also denied the importance of economic factors as a source of racial degeneracy and instead blamed the "personal factor." In this case personal failings were interpreted in terms of inborn moral, mental, and bodily weaknesses. A hereditarian version of individualism was described for instance by the EES member Elizabeth Sloan Chesser, who declared that ill health and misery in the lower classes were due to inherited character flaws and maternal ignorance:

It is not poverty which lies at the root of the misery and squalor that abound in factory districts; it is not lack of money which is responsible for the starved children, the deaths of infants, the stunted physique and mental and moral degradation of the people, so much as ignorance, indifference, inherited slovenliness and improvidence.95

For the Lamarckian eugenist Caleb Saleeby, the personal factor in eugenics mostly referred to the individual responsibility of mothers to raise sound offspring and a vigorous race. He worried that women's special racial duties were being superceded by milk depots and creches, and he maintained that infant mortality was due more often to maternal inefficiency and married women's labour than to poverty itself.96 Eugenists such as Saleeby and Chesser thus sounded very much like public health doctors such as Arthur Newsholme, who similarly called for the creation of an Imperial race through reformation of character and the


96See especially Saleeby, Woman and Womanhood, pp. 194 and 299.
encouragement of "responsible individual behavior." In medical and moral language both eugenist and MOH blamed the immorality and inefficiency of individuals rather than an inequitable economic system for the poverty and sickness so prevalent in certain sectors of the community.

My brief treatment of the kinds of health reform policies favoured by eugenists, social hygienists, and public health doctors is intended to illustrate how pervasive an individualistic and class-centred style of social reform was during the first two decades of the century. Thus with respect to the types of social policies they advocated, there was no neat dichotomy between hereditarians and environmentalists or between eugenists of the hard and soft hereditary camps. I began this discussion with the observation that Saleeby’s programme of medical or public health oriented eugenics has sometimes been misconstrued as differing from mainline eugenics in its political origins: several historians have implied that his resistance to class eugenics and support for limited social welfare legislation arose from left-wing sentiments. Let me conclude now by addressing this supposed distinction in the political affiliations of mainline and Lamarckian eugenists. What can the particular examples of Pearson and Saleeby tell us about the political dimension of eugenic thought in the British context?

Historians and sociologists studying the history of eugenics have customarily assumed that belief in unmodifiable heredity as the cause of most human traits was associated with political conservatism, whereas theories that held out hope for altering the environment for

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the good of mankind were most often defended by scientists with liberal or radical leanings.\textsuperscript{98} But in fact many exceptions to this generalization about the politics of nature-nurture controversies can easily be identified. In Britain ideas about applying negative eugenics to the inferior portions of the labouring classes were supported not only by known conservatives such as Montague Crackanthorpe, Dean W. R. Inge, and W. C. D. Whetham, but also by activists at the other end of the political spectrum such as the members of the socialist Fabian Society.\textsuperscript{99} Likewise Karl Pearson, although never part of the Fabian group itself, also labelled himself a socialist in a similar non-revolutionary, technocratic mould.

On the other side of the coin, prominent members of the environmentalist camp of Edwardian social activists, from the medical eugenist Saleeby to the MOH Newsholme, certainly did not identify themselves as politically radical. Nor did they express very progressive attitudes towards dealing with the problem of the urban residuum. I have argued that both of these men endorsed measures aimed at altering individual behaviour and promoting economic independence rather than any kinds of collectivist welfare reforms. Saleeby even expressly objected when opponents dismissed his support for maternal and infant welfare measures as socialistic.\textsuperscript{100} More generally speaking, Edwardian era provisions

\textsuperscript{98}An early and rather unsophisticated sociological study of the political leanings of some of the participants in twentieth-century debates over the relative importance of heredity and environment is Nicholas Pastore, \textit{The Nature-Nurture Controversy} (New York: King’s Crown, 1949).

\textsuperscript{99}It has been argued that Fabians such as Sidney Webb, H. G. Wells, and Bernard Shaw perceived convergences between socialism and eugenics in the shared emphasis placed on state intervention, social planning, and the role of scientific experts. Freeden, “Eugenics and Progressive Thought,” pp. 656-60.

\textsuperscript{100}Saleeby, \textit{Progress of Eugenics}, p. 24.
for the medical care and feeding of mothers and children, employment insurance, and
national health insurance—which represented the first steps towards establishing the modern
welfare state—were all implemented not according to any progressive scheme for equality
and social justice, but rather in response to the perceived crisis of national inefficiency.

The familiar political landscape of contemporary nature-nurture controversies might
lead one to expect that varieties of "environmentalism" have always been associated with
progressive political beliefs. But in fact it was not until the 1930s that accounts of human
traits and social ills which emphasized the role of environmental factors became linked with
leftist politics and aversion to the class hatred preached by an earlier generation of
eugenists.101 Similarly the history of preventive eugenics in Britain refutes the assumption
that Lamarckian theories of heredity were usually championed by scientists with left-wing
sensibilities, who believed that this particular brand of environmentalism would further their
own progressive reform agendas.102 Saleeby for one certainly did not fit this stereotype, nor

101 One account of how progressive sociologists, anthropologists, and psychologists reacted
against hereditary eugenics is provided by Hamilton Cravens, *The Triumph of Evolution:*
*American Scientists and the Heredity-Evolution Controversy, 1900-1941* (Philadelphia: U of
Pennsylvania P, 1978). Another linkage between leftist politics and environmentalism was
drawn during the 1930s by the Marxist biologists Lancelot Hogben and J. B. S. Haldane, who
used new techniques of mathematical genetics to transform the old class eugenics into what
was seen as a politically and ethically neutral science of human genetics or "reform
eugenics." This later style of genetic research did not ignore the importance of environmental
factors such as nutrition in determining phenotypes, and it focused on investigating the
 genetic causes of distinct clinical conditions in individual families rather than vague
categories of behaviour and mental illness associated almost exclusively with the pauper
183.

102 This myth has also been debunked by Peter Bowler, "E. W. MacBrige's Lamarckian
Eugenics and its Implications for the Social Construction of Scientific Knowledge," *Annals*
have I found any non-mainline eugenists in England who interpreted Lamarckian or pseudo-Lamarckian doctrines in a way that might optimize the efficacy of socialist-sounding environmental improvements. They never suggested for instance that the increased stature or fitness of individuals who had benefitted from sanitation or welfare reforms might be transmissible to offspring. Saleeby even went so far as to chastise socialists for clinging to the unrealistic belief that the effects of education could be cumulative over many generations. The early-century British writers I have discussed here did not make use of the theory of true inheritance of acquired characters, but instead interpreted research on alcoholic heredity in terms of blastophthoria and pre- and post-natal poisoning. They were most interested in how treatment of disease and reclamation of drunkards could benefit subsequent generations of the race. Belief in soft heredity led to the pessimistic conclusion that immoral behaviour and deleterious conditions of life could cause irrevocable damage to offspring or the hereditary material.

2. A Struggle for Authority over Alcoholism and Degeneration

This thesis has so far compared the scientific content and social context of two styles of eugenic thought in Great Britain. The final step will be to explore the professional dimension of the history of eugenics, or in other words to return to the question posed in the first

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of *Science* 41 (1984): 245-60. Bowler shows that the zoologist MacBride, a leading scientific member of the EES during the 1910s and 20s, was one of the last and most vigorous supporters of the theory of inheritance of acquired characteristics in Britain, despite his extremely reactionary and even racialist politics.

I have already suggested that a Lamarckian or environmentalist version of eugenics was championed mainly by medical professionals who considered it a logical extension of their duties to apply preventive and curative medicine to the well-being of future as well as current generations. It could be argued that the problem of the "future of the race" fell within the professional domains of medical practitioners and public health officers, as well as those of geneticists, biologists, and biometricians whose work has been featured in most of the existing historiography. I have already documented the fact that the Eugenics Education Society counted a substantial contingent of doctors and surgeons among its ranks during this early period, many of them eminent in their fields. Many although certainly not all of those medical eugenists were key proponents of the more environmentally oriented style of eugenics. These writers effectively bridged the gap between hard hereditarian eugenics and public health approaches to social reform.

Alternatively, a stronger claim could be made about the significance of doctors in the EES. It was sometimes argued even by contemporary writers that all doctors could and perhaps should have perceived themselves as eugenists, regardless of whether they actually belonged to the movement or employed the language of degeneration. Physicians routinely contributed to the cause of improving racial and imperial health, for example by working for the infant and maternal welfare campaign, treating syphilis, or warning their patients about the risks of parental drinking. Statements about doctors' responsibility for preserving racial health were made by medical eugenists such as Caleb Saleeby and Mary Scharlieb. For instance Scharlieb pointed out that the ante-natal and nurtural influences on the fitness of offspring were amenable to medical management, while dismissing the distant hereditary
origins of degeneracy as an aspect of eugenics into which it was relatively “useless to inquire.” In particular, as a eugenist and a temperance doctor she exhorted her colleagues to exercise their power and their duties by advising women that alcohol consumption could only have disastrous effects during pregnancy, and by setting an example for their patients and the general public by practicing moderation or teetotalism themselves.\textsuperscript{104} Saleeby likewise called upon medical authorities to recognize the fact that their professional practices could ameliorate not only individual and community health but also the long-term welfare of the race. He complained that the nascent eugenics movement was dominated by biologists and statisticians who lacked the experience and skills to address the causes and solutions of medical and social ills:

> It must be remembered that eugenists are not medical men, the medical profession not yet having realized that the stage of attention to individual hygiene and preventive medicine in which it is now finding itself must necessarily go even further, and be succeeded by a final stage, where racial hygiene . . . will be the goal and ideal of that great profession.\textsuperscript{105}

At one point Saleeby even went so far as to designate eugenics a branch of medical practice:

> “eugenics is racial medicine. . . which endeavours to cure and prevent the diseases of the

\begin{footnotes}
\footnote{\textsuperscript{104}Mary Scharlieb, “Alcohol and the Child-Bearing Woman,” \textit{British Journal of Inebriety} 11 (1913): 62-66.}

\footnote{\textsuperscript{105}Caleb Saleeby, “Alcoholism and Eugenics,” \textit{British Journal of Inebriety} 7 (1909): 9. Elsewhere he urged that “of all morbid conditions against which preventive medicine fights, the first to be dealt with and abolished should surely be those which injure not only the present but also future generations.” Caleb Saleeby, \textit{A Ministry of Health and the Racial Poisons} (Birmingham: Templar, 1918), p. 4. As the title of this text suggests, Saleeby thought that the eugenic problem of eliminating racial poisons should be dealt with by a centralized public health service, not just through the eugenics movement.}
\end{footnotes}
race.\textsuperscript{106}

Health care professionals contributed to eugenic discourses and to the cause of race betterment from positions both inside and outside of the organized eugenics movement itself. Medical and environmentalist interests thus played a larger role in the professional composition and policy proposals of British eugenics than has previously been acknowledged. As noted in Chapter I, the British Lamarckian style of eugenics strongly resembled the dominant eugenics traditions in other national contexts such as France and Latin America, which were largely ruled by doctors. Physicians similarly controlled the eugenics movements in Canada, South Africa, and Germany. As will be seen next, these cases can now serve as models for understanding the occupational make-up of the British eugenics movement. In these narratives, certain groups of doctors are depicted as having used their involvement in eugenics in order to achieve social prestige or jobs in State service and to stake out new claims to expertise.

\textit{Doctors, Public Health, and the Future of the Race}

In the previous section I demonstrated convergences between the mainline and Lamarckian styles of eugenics in their aims and policies for improving racial health. I further suggested that certain similarities existed between hereditarian and environmentalist approaches to social reform, contrary to the received view of the relationship between eugenics and public health put forward by historians such as Dorothy Porter. These affinities

\textsuperscript{106}Saleeby, \textit{Progress of Eugenics}, p. 132.
resulted from common imperialistic anxieties about national decadence that followed the disastrous Boer War and focused on the fitness of the labouring or residuum classes.

Edwardian doctors and social activists sought to ensure a sufficient supply of healthy bodies to populate the nation and the empire, primarily by means of conservative reforms aimed at managing the behaviour and home life of individuals. Their reforms ranged from educating new mothers to curtailing alcohol consumption to segregating the unfit.

Lamarckian or medical eugenics represented a direct connection to the public health and social hygiene campaigns that addressed such problems as infant mortality, venereal disease, and alcohol abuse. An interconnected network of medical personnel supported all of these causes, including that of race betterment. Their common objective was to protect parents and children from racial poisons and other deleterious environmental influences, and they justified their programmes on the basis of an accepted body of scientific knowledge about the physiological and pathological effects of these poisons. However, the overlap that existed between eugenics and public health in their personnel, aims, and scientific foundations was not entirely mediated by Lamarckian eugenics. It would appear that the leadership of the Eugenics Education Society saw nothing heretical about forging alliances with various public health and environmentalist programmes. This was true not only of the EES's participation in the campaigns against syphilis and habitual inebriety, but also of its attempts to place both negative and preventive eugenics on the agenda of the public health doctors.

Notices and reviews of public health conferences were regularly printed in the pages of the *Eugenics Review*, while the Society even sent an official delegation to Paris for the 1913
Royal Institute of Public Health Congress. In a special section on "Eugenics and Child Study," the problems of alcoholism, venereal disease, and infant mortality were addressed by the British eugenists Saleeby and Douglas White, as well as by many of the French participants. Other speakers from both countries instead emphasized inborn characters and the differential birthrate as the principal objects of eugenic study, particularly in reference to mental deficiency. In their report on this congress the British eugenists indicated their expectations as to how members of the public health service could contribute to the racial improvement of mankind:

Once this body is awake to the racial bearing of its work, and considers what policy of social hygiene is best calculated to raise the inherent capacity for health in the general community, we may hope to improve "the racial quality of future generations." Indications are not wanting that the awakening of the medical eugenic conscience is at hand.

Clearly then public health reforms were not invariably perceived as antithetical to race betterment, even by mainline eugenists who were primarily interested in alerting medical attention to the hereditary factor in the etiology of diseases and mental defect. The EES's report on this 1913 conference closed with a plea for medical officers of health to begin systematically collecting family data that would eventually help reveal the true causes of disease and degeneracy. The eugenists hoped to

inspire the medical profession with the necessary enthusiasm to enlist their cooperation in the Eugenic cause. The doctors should be the priests of the religion of Eugenics; let them hasten to search for the answers to those questions which

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the laity will be asking them in the near future. They have the opportunity, will they make use of it?\textsuperscript{109}

On the other side of the coin, public health doctors sometimes sounded as amenable to the goals and methods of the eugenics movement as eugenists sounded eager to enlist the support of the public health service. I have already refuted Porter's supposition that MOH inevitably perceived their work to be in conflict with the eugenics programme by showing that several such medical men were active in the EES during this early period. Now I will argue that even the high-ranking MOH Sir Arthur Newsholme and Sir George Newman, who surely represented the opposite end of the nature-nurture spectrum from the mainline eugenists, expressed in their writings eugenic-sounding concerns about preserving the "Imperial race" not only from such environmental hazards as alcohol and maternal inefficiency, but also from the excessive fertility of less fit social groups.

Newsholme was well known as a critic of hereditarian eugenics, in particular for his denunciations of the better-dead doctrines on infant mortality and tuberculosis promoted by Karl Pearson.\textsuperscript{110} He did not however repudiate the whole eugenic philosophy, pronouncing for instance that "I share the belief in the importance of heredity but am equally convinced of the importance of environment, including infection and parental habits of life in health

\textsuperscript{109}\textit{Ibid.}, p. 164.

problems." Newsholme also addressed the very question at the heart of the eugenics problematic: what changing fertility patterns in the British population meant for the future of the race. He concurred with the eugenists' conclusion that evolutionary progress would not occur if the birthrate of the lower social classes continued to outpace that of the fitter middle classes, although he attributed the unfitness of their offspring to poor nurture rather than heritable differences between the classes. In like fashion his colleague Newman chose to incorporate "eugenics and the principles of sound breeding" into his proposed "national policy in Preventive Medicine." Newman even expressed concerns about the fact that modern civilization was allowing the unchecked reproduction of the innately unfit, an outlook that hardly fits Porter's stereotype of the anti-eugenical public health doctor. He spelled out his opinions on the propagation of the innately or congenitally unfit in a 1919 text outlining his plans for the new Ministry of Health:

To start a man fairly on life's journey he requires a sound foundation in physique. We have to think in terms of race, and thus it comes about that the idea of parentage and ancestry cannot be ignored. If we are to grow a sound and healthy race of men we must begin, where all true breeding begins, at the source. If we permit ourselves to favour and provide for the unguided propagation of a population of poor physique or of persons marked from birth with the stigmata of alcohol, venereal disease or mental deficiency, we shall sooner or later discover that we are building on false foundations, and without taking sufficiently into our


reckoning the Laws of Heredity, of transmission, and of ante-natal infection.\textsuperscript{113}

MOH such as Newman and Newsholme thus concurred with mainline eugenic doctrines on lowering the birthrate among certain "undesirable" portions of the population, as well as with the soft hereditarian assumptions of preventive eugenics, especially regarding the alcohol question. Their motives for attacking the problem of infant mortality were also consistent with the goals of the eugenics movement. It was often argued that an excessive number of infant fatalities not only diminished the absolute size of the next generation of the race but also signified a deterioration in its overall health, since surviving children were likely to have been enfeebled by the same deleterious conditions and diseases that killed their siblings. In Newman's words, "a high infant mortality rate almost necessarily denotes a prevalence of those causes and conditions which in the long run determine a degeneration of race."\textsuperscript{114}

In order to account for medical styles of eugenics and medical concerns about the matter of preserving racial fitness, much of the new international historiography has turned to the role of professional interests. This mode of explaining the popularity of eugenic thought among certain constituencies was actually pioneered by historians interested in the class composition of the British movement, especially Lyndsay Farrall, Geoffrey Searle, and


Donald MacKenzie. However, these writers did not apply their analyses specifically to the many practitioners of preventive medicine who joined the EES. MacKenzie’s account described hard hereditarian beliefs as consonant with the interests of a large group he labelled the professional middle classes. Biological determinism provided a scientific sanction for existing class divisions, in terms of a natural hierarchy of intellectual abilities. Eugenics thereby served the interests of the educated middle classes by legitimizing their social position and their special qualifications as the “brain-power” of the nation.

While this story is useful as far as it goes, it cannot explain the content of the eugenic theories promoted by many medical and lay members of the EES who rejected the kind of rigorous hereditarianism espoused by Karl Pearson and other mainline eugenists. MacKenzie noted the negative reaction that Pearson’s studies of alcoholism and tuberculosis received from a few prominent eugenists. But he went no further than to suggest that these disputes were generated by the opponents’ commitments to temperance and other environmentalist reforms:

They were hereditarians in general, but wished to maintain particular exceptions to eugenic principles because of particular commitments: to the temperance movement, in the case of the controversy over alcoholism, and to environmental health programmes and sanatorium treatment in the case of tuberculosis. Pearson, free of these cross-cutting commitments, was able to develop a consistent hereditarianism unaltered by particularistic

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exceptions.\textsuperscript{116}

MacKenzie thus emphasized the role of social and professional interests in determining Pearson's "consistent" hereditarian stance, but he did not attempt to make a symmetrical argument accounting for the theories of soft heredity preferred by other members of the eugenics movement. Instead he implied in the passage just quoted that their natural class interests became subordinated to other "commitments." He only briefly hinted that these alternative commitments—to the anti-alcohol crusade and other public health reforms—may likewise have been motivated by some sort of professional incentives, namely relating to "the fine structure of institutions and occupations."\textsuperscript{117} The competition between hard hereditarian and Lamarckian eugenists thus involved finer distinctions between professional groups than suggested by MacKenzie's broad characterization. In particular, a revised historiography needs to consider the question of what medical professionals felt they stood to gain from promoting the cause of race betterment or more specifically an environmentalist version of eugenics.

It should be noted first of all that a hereditarian philosophy of social reform certainly could not devalue the work of all physicians or public health officials. On the contrary, in Britain and elsewhere during the first few decades of the century some MOH began to devote special attention to the hereditary component of diseases and social problems, of which the most notable was mental deficiency. As the historian of Canadian eugenics Angus McLaren


\textsuperscript{117}\textit{Ibid.}
has noted, medical eugenists realized that an “understanding of heredity could improve public health,” and therefore they began to include as part of their work investigating family histories of degeneracy and advocating the eugenic segregation of the feebleminded.\textsuperscript{118} Heredity occupied a central place on the public health agendas of eugenists such as Helen MacMurchy in Canada and Ettie Sayer in England, who was medical officer to the London County Council Education Department.\textsuperscript{119} These public health workers attempted to establish their expertise as medical-scientific authorities on racial as well as community health. With their access to clinical materials, family studies, and social surveys they were in an ideal position to produce knowledge about the hereditary causation of feeblemindedness, alcoholism, and other manifestations of degeneracy. It could thus be expected that the State would call upon them to set social policy on questions relating to national regeneration, which for the hard hereditarian eugenists usually meant permanent institutionalization of the unfit.

Incorporating eugenic aims into preventive medicine would enhance the social prestige of the medical profession: to study and eventually halt the progressive degeneration of the race was a vital responsibility that doctors justly believed fell within their domain of


\textsuperscript{119}See also Greta Jones’s work on how the British public health movement from 1910 onwards came to adopt hereditarian ideas and along with them a job description that included the eugenic measure of preventing the multiplication of the unfit. Jones, \textit{Social Hygiene in Twentieth-Century Britain}, p. 8.
expertise. This analysis in terms of medical self-interests can also be applied to approaches to preserving racial health that did not focus on heredity per se. Under the guise of preventive or nurtural eugenics, public health and social hygiene measures against diseases, alcoholism, and maternal inefficiency that took such a devastating toll on the next generation of the race now acquired added significance. The goal of ensuring future supplies of healthy bodies could be achieved through the efforts of MOH, obstetricians, and general practitioners whose duties included for example educating the public on the racial effects of alcohol and syphilis or providing better care for expectant mothers and infants. Certain groups of medical professionals may have recognized that their involvement in eugenics could earn them expanded social roles. That such practical interests were likely at stake in the British context is strongly suggested by comparisons with medical eugenics in many other countries.

Practitioners of curative and preventive medicine made up the single largest occupational group in most of the world’s eugenics movements. In France for example the obstetricians who pioneered the neo-Lamarckian version of eugenics called puericulture were undoubtedly conscious of how anxieties about maintaining the quantity and quality of the population could further their own self-interests. In that context eugenics "was attractive to a

\[120\] Sheila Weiss has made a similar argument for the role of medical self-interests in the German race hygiene movement before 1919. The main protagonist of her story, William Schallmayer, was a physician who promoted negative eugenics as the principal means of addressing Germany’s crisis of national inefficiency. Weiss emphasizes the technocratic logic of Schallmayer’s eugenics: he was concerned to legitimize physicians’ role as administrators of the health of the people, and he believed that they could fill this role not only by means of their work in public health and bacteriology but also through eugenic control over the hereditary fitness of the population. Sheila Weiss, Race Hygiene and National Efficiency: The Eugenics of Wilhelm Schallmayer (Berkeley: U of California P, 1987), pp. 88-89 and 114-25.
wide variety of specialists concerned with infant health because it gave their work an
importance not only for the present, but for subsequent generations as well."121 In Latin
American nations the eugenics organizations were likewise made up almost exclusively of
doctors. Nancy Leys Stepan notes that eugenics appealed to Brazilian doctors in part because
it opened up for them the possibility of expanded professional and social duties: supporters of
eugenics and other medical professionals in that nation were "eager to promote their role as
experts in shaping social life."122 Their expertise in matters of community health, which
included sanitation and housing reforms as well as efforts to combat the racial poisons, came
to be considered even more valuable owing to Lamarckian beliefs that improvements to the
environment could impact on the welfare of future generations.

A similar story has been told about the involvement of health professionals in the
eugenics movement in South Africa. Numerous doctors entered this new field eager to
expand the sphere of influence of their profession, by becoming advisors to the "government,
philanthropic societies, parents, teachers, lawyers, and judges" on matters of individual,
community, and racial health.123 As was the case in Britain, South African doctors believed


123Susanne Klausen, "'For the Sake of the Race': Eugenic Discourses in the South African Medical Record, 1903-1926 and the Journal of the Medical Association of South Africa, 1927-1931" (M.A. diss., Queen's University, 1994), pp. 13-14 and 113. As in the Brazilian case, South African doctors prior to 1920 were still seeking centralized control over the nation's health, and may have employed the rhetoric of eugenics to achieve this goal.
that both hereditarian and environmentalist styles of eugenics could effect racial improvement, and therefore they often justified public health work on eugenic grounds. Although many physicians and MOH resisted or ignored eugenics because they feared its hereditarian interpretations threatened their professional security, other leading members of the profession believed that the specialized skills doctors attained in diagnosing illness and prescribing treatment for the ill, as well as their understanding of social problems such as the proliferation of the unfit as having a biological base, justified extending medical responsibility to include the “nation’s health” as a whole.  

Paul Weindling’s exhaustive study of the German race hygiene movement similarly considers professional aspirations to have been one of the unifying forces that led physicians and scientists from various fields to involve themselves in a network of voluntary organizations and state institutions that addressed the problem of regenerating racial vitality. All of these workers were seeking professional authority, social status, and above all State patronage for medicine and science, which might provide them with funding or a guaranteed livelihood. As one reviewer of Weindling’s book has explained, German doctors thus saw


\[125\] Paul Weindling, *Health, Race, and German Politics between National Unification and Nazism, 1870-1945* (Cambridge UP, 1989), pp. 155-280. Weindling’s larger goal is to trace the dangerous authoritarian or anti-democratic nature of Nazi eugenics and social medicine to the professional aspirations of doctors, rather than to its association with a totalitarian regime. His interpretation “stresses that eugenics was authoritarian in that it offered the state and profession unlimited powers to eradicate disease and improve the health of future generations” (p. 7). In other words, the anti-democratic nature of German eugenics lay inherent from the 1890s in its technocratic logic. Scientists and doctors claimed that they alone stood outside of and above mere party politics, and that this made them uniquely qualified to make decisions of national importance. They translated their specialized knowledge and self-proclaimed expertise into power over the lives of the rest of the
involvement in eugenics as a means of entrenching themselves in "state-supported institutions that pushed to integrate science, therapy, and policy."126

In the case of the British doctors I have discussed here, support for eugenics might likewise be interpreted in terms of gaining some sort of occupational advantages. Expectations of financial or material gain may not have been as important to medical eugenists in England as they apparently were to their counterparts in other countries such as Germany and Russia, where medical services and social reform were organized and funded by the State. Nevertheless it could be argued for example that British public health doctors used the crisis of racial health to justify municipal and philanthropic support for their work in infant welfare centres, or that specialists in mental diseases used hereditarianism to warrant medical and institutional care of the feebleminded. One particularly important social role these doctors aspired to be called upon to discharge was as expert medical-scientific advisors to the government on issues pertaining to the fitness of children and the race. But above all the medical supporters of Lamarckian eugenics simply sought public approbation for the vital work they were doing on behalf of the nation and the race, for instance when they dispensed advice on infant care, provided health exams to school children, or fought to introduce anti-alcohol teaching into the schools.

In short, then, medical eugenists believed that enhanced public esteem would be the reward for those occupational groups that managed to establish themselves as medical-

population, power which was most notoriously abused during the Nazi era.

scientific experts on race regeneration. Of course the doctors were not the only professional group competing for this position in Britain during the first decades of the century, and in fact their claims to authority were sometimes contested by eugenists of the mainline camp. One such struggle for authority occurred over the issue of the eugenic significance of parental alcoholism. Returning now to the debate over the biometricians’ 1910 memoir as a case study in the history of eugenics, I would like to suggest one last explanation for the hostilities that erupted between eugenists and temperance doctors and more specifically between the hard hereditarian Karl Pearson and his soft hereditarian colleague Caleb Saleeby. The participants in this debate were well aware that they were engaged in a professional competition over who was most qualified to guide social policy on and produce scientific knowledge about the effects of parental alcohol use on offspring and the race.

The Experimenters and Observers versus the Calculators

The existing historiography of British eugenics has singled out a small number of specialties within the medical and scientific professions which contributed to hereditary discourses and reform policies. For example MacKenzie lists the following groups who would have been most likely to advance their professional interests by championing their work under the banner of eugenics:

The eugenic solution to the social problem of the urban sub-proletariat would employ the statistician’s figures, the biologist’s studies, the psychologist’s tests, the social worker’s case reports and ultimately the psychiatrist’s custodial care or the surgeon’s scalpel. It would thus give full play to the skills of the developing
It should be noted however that MacKenzie's account of the medical-scientific skills or expertise used to support a hereditary philosophy of social reform conflates two distinct types of expertise. On the one hand, the professional skills valuable to the eugenics movement were said to involve particular methods of scientific research, such as statistics, intelligence testing, and genetic family studies and breeding experiments. But the last two examples given in this passage, the work of psychiatrists and surgeons, instead pertain to expertise in the sense of distinctive medical practices. These eugenists were responsible not for research into hereditary conditions but for the work of managing the unfit through segregation and sterilization. Thus under this latter definition of eugenic skills, MacKenzie also ought to have included other medical personnel who worked to diagnose, treat, and prevent various conditions believed to affect the health of offspring. Medical practices that preserved the lives of infants or protected parents from the racial poisons likewise could be classified as skills relevant to the preventive and nurtural styles of eugenics.

In the last section I addressed the fact that the received view of the history of eugenics neglects the ways in which doctors functioned as guardians of national and racial health. Now I shall suggest a parallel argument about the role of medical-scientific research in the eugenics programme. MacKenzie and other historians have devoted exclusive attention to biologists and social scientists whose investigations in such areas as evolution and inheritance, demography, and psychology appeared to be especially relevant to the eugenics

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cause. But an emphasis on the Lamarckian style of eugenics in Britain reveals other types of research that were considered crucial to understanding the problem of degeneration. These were the social surveys, pathological studies, and animal experiments that investigated the causes of hereditary and congenital defects, especially where the racial poisons alcohol and lead were involved.

The 1910-11 controversy over Pearson’s findings on alcoholism provided one occasion on which ideas about the methodological and disciplinary foundations of eugenic science were clearly articulated. This dispute revealed a sharp rift between at least two different camps of scientific researchers over the issue of who possessed the skills and techniques necessary to produce valid scientific knowledge about the relationship between alcoholism and degeneracy.128 On the one side, led by the polemicist Saleeby, were a group of doctors and eugenists who assumed that the pathological effects of alcohol on the drinker and his progeny could only be fully studied in the laboratory and clinic. They were defending this type of research, which was usually conducted on behalf of the temperance crusade, against the attacks of the young biometrical school. Of all the members of the medical and scientific

128My interpretation of this episode in the history of eugenics, emphasizing the disciplinary divisions and distinct scientific methods employed by each side in the debate, improves on Lyndsay Farrall’s earlier analysis which suggested that differences of opinion arose between biometricians and temperance doctors simply because one camp treated eugenics as a science while the other treated it as a social philosophy. Farrall accepts at face value Pearson’s characterization of his anti-drink opponents as nothing more than “polemical and partisan” commentators. But in fact the temperance writers and Lamarckian eugenists believed that their racial poison theory and the significant body of experimental and pathological evidence that supported it could serve as a scientific foundation for a programme of race culture. Lyndsay Farrall, *The Origins and Growth of the English Eugenics Movement* (1969; New York: Garland, 1985), p. 281.
professions involved with the movement for race betterment, it was the biometricians who were most eager to use eugenics as a means of advancing their social prestige and material interests. They promoted themselves as eugenic experts on the grounds of a unique professional skill: their ability as trained mathematicians to undertake statistical research into the causation of social problems such as alcoholism.

I have already described at some length in Chapter III the techniques of mathematical statistics pioneered by Pearson and his students and colleagues at the Biometric and Eugenics Laboratories. Pearson proclaimed that his "calculus of correlation" was a powerful method of research that could settle once and for all the nature-nurture debate. His school's statistical studies had already demonstrated that heredity was largely responsible for most human attributes and diseases, and that negative and positive eugenics would therefore be the most effective means of social reform. As Pearson most famously expressed the hereditarian creed, "we have placed our money on Environment, when Heredity wins in a canter."[129] Temperance advocates, public health doctors, and non-mainline eugenists all repudiated the biometricians' rigid hereditarian conclusions. But the novel research methods employed by the Eugenics Laboratory workers also came under fire, as doctors challenged these mathematical intruders into the domain of medical research and rejected their claim that statistical analysis produced more reliable results than did clinical and experimental studies.

Saleeby in particular introduced into the 1910-11 debate with Pearson arguments about the training, skills, and experience that were required in order to be recognized as experts in

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[129] Pearso n, Problem of Practical Eugenics, p. 36.
eugenic research and policy making. He contended that the biometricians were unqualified to investigate questions relating to the physiology and pathology of alcohol since they lacked experience in the relevant branches of medical and biological science and in their laboratory practices. Such biological problems were “naturally foreign to the realm of the actuary.”

Saleeby’s rhetoric pitted the biologists and medical researchers against the mathematicians, or the “experimenters and observers” against the “calculators.” He cautioned that this new school of non-biologists ought not be permitted to overturn the discoveries of the established authorities. Pearson’s surprising finding that the children of heavy drinkers did not suffer any mental or physical deficiencies was thus dismissed as “the solitary opinion of a beginner,” which was “authoritatively contradicted by critical and expert study, historical, statistical, clinical, experimental, and microscopic.”

In his earliest writings on the sciences of heredity, evolution, and eugenics, Saleeby had been cautiously optimistic about biometry as an instrument for introducing mathematics into the life sciences, and he had been excited about the new Eugenics Laboratory as a potential ally in the campaign for race culture. However, the work on parental alcoholism first

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130 Saleeby, “Alcoholism and Eugenics,” p. 10. Saleeby used the term “actuarial” to describe the biometricians’ style of quantitative research. He did not intend the technical meaning of calculating death risks for life insurance purposes.


132 Ibid., p. 66.

133 For instance in 1905 Saleeby predicted that the tools developed by the biometricians would be considered valuable to biologists, doctors, and social workers who required expert mathematical reduction of their data. “There is no questioning the dictum of Kant, that the completeness and validity of any objective science is proportioned to the degree in which it is
turned him against the biometricians and from that point on he devoted himself to producing a steady stream of popular articles and books intended to counteract “the flood of statistical and pseudo-eugenic literature which teaches that nurture is of negligible importance.”

Only those eugenists who had “no idea of a living thing,” or in other words who did all their work on paper and lacked first-hand experience studying actual organisms, could make such ridiculous declarations about separating out the effects of nature from those of nurture. The healthy development of all living things obviously required both good heredity and environment.

Regarding environmental influences in the form of the racial poisons, Saleeby pronounced the biometricians unqualified to make dogmatic assertions on the validity of this theory. Their methodology had failed them in the 1910 study of the effects of parental alcoholism owing in part to the incomplete nature of the data that they had subjected to statistical analysis. No information had been recorded regarding the duration of the parental alcoholism or the ages of the children, and hence no firm conclusions could be drawn about pre-natal poisoning. While Saleeby certainly believed that social surveys on health and conditions of life could be valuable in eugenics research, the collection of such data was a job best undertaken by medical experts, not mere social workers.

Saleeby, Heredity, p. 41.

Saleeby, Progress of Eugenics, p. 49.

Ibid., p. 28.

Saleeby provided an example of a valid social survey of drinkers and offspring that had recently been published by the Finnish doctor Taav Laitinen. This researcher tabulated data on a much larger sample population (20,000 children in 5800 families) than those utilized in
calculations, the biometricians at least ought to have consulted biologists and medical men better acquainted with the subject matter of their studies.\footnote{Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” p. 54.} Alternatively, Saleeby was willing to acknowledge the potential utility of mathematical statistics for the medical sciences, but he suggested that the experimenters and observers themselves ought to be trained in these methods: “biometry must continually make these mistakes until it is practised by biologists.”\footnote{Ibid., p. 64.}

Most critiques of Elderton and Pearson’s study of the relationship between parental drinking and the fitness of offspring focused on the issue of the origin of hereditary defects, which had been entirely neglected by the biometricians. Non-mainline eugenists assumed that agencies such as alcohol and lead could turn worthy into unworthy stocks and that this was therefore a critical area for scientific hypothesis and research.\footnote{As discussed in the previous chapter, writers such as Saleeby and Alfred Tredgold objected when hard hereditarian eugenists confessed ignorance about ultimate causation by asserting that hereditary defects were simply “spontaneous” in origin. This was not the way to advance scientific knowledge. See for instance Alfred Tredgold, \textit{Mental Deficiency (Amentia)}, 4th edn. (London: Baillière, Tindall and Cox, 1922), p. 28.} Saleeby objected that the biometricians were both uninterested in and unable to address this question of the possible environmental origins of degeneracy. Their method of measuring correlation the Elderton study; he had supposedly been much more careful than any social workers could be about evaluating the severity of the parental drink habits and collecting information on all relevant questions about the children. Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” pp. 63-64. Taavetti Laitinen, “A Contribution to the Study of the Influence of Alcohol on the Degeneration of Human Offspring,” in \textit{Proceedings of the Twelfth International Congress on Alcoholism} (London: Paternoster House, 1909), pp. 263-70.
between factors suspected to be associated could only provide evidence as to the transmissibility of traits, which from the point of view of preventive eugenics was merely the easiest and least urgent aspect of the programme.

It is at present a very serious matter that eugenists are not acquainted with physiology, or pathology, or toxicology. We cannot forever be content with statistical inquires, showing to what extent feeblemindedness, for instance, is transmissible: there is also the biological inquiry . . . as to its primary causation.140

John Maynard Keynes similarly criticized the biometricians’ for ignoring the majority scientific opinion on the racial poison theory. Their outright rejection of this theory was thoroughly unwarranted owing to the fact that “physiologists can tell us ways in which it is at least possible for parental alcoholism before the birth of a child to affect it ab initio.”141 Keynes thus concluded that the resolution of this physiological question seemed to “invite the application of experimental rather than statistical methods.”142

Pearson had implied that the validity of the racial poison theory could be tested by statistical analysis of social scientific data alone. In fact the eugenists of the British biometrical school contended that all questions about heredity, degeneration, and social ills could be resolved using either the calculus of correlation or family pedigrees. Saleeby on the other hand was eager to dispel the notion that the science of eugenics was synonymous with


biometry: "eugenics is not... a sub-section of applied mathematics."\textsuperscript{143} In his opinion, biometry was but one of many sciences upon which this social reform programme ought to be founded. At one point he listed genetics, toxicology, obstetrics, dietetics, psychology, anthropology, and sociology as fields of scientific inquiry that could contribute to knowledge about racial health. His expanded definition of eugenics, which included attention not only to inborn characters but also to environmental influences on parents and offspring, meant that eugenic science need not be limited to studies of hereditary transmission.\textsuperscript{144}

For example, Saleeby championed the special role of "the great science of obstetrics," which he predicted "will be the handmaid of practical eugenics in the near future."\textsuperscript{145} He drew special attention to the hospital-based research on ante-natal pathology undertaken by his teacher John Ballantyne, which confirmed the belief held by many medical men that the biometricians and other hard hereditarians "most flagrantly and disastrously err when they study infants at birth as if only heredity accounted for their characteristics."\textsuperscript{146} Likewise Ballantyne himself emphasized recent advances in embryology and fetal physiology, along with experiments that exposed animal germ cells and embryos to alcohol, as the most important lines of biological research from the standpoint of eugenics and preventive medicine. "Accurate knowledge regarding the laws that determine antenatal health and

\textsuperscript{143}Saleeby, \textit{Parenthood and Race Culture}, p. ix.

\textsuperscript{144}Saleeby, \textit{Progress of Eugenics}, pp. 138-47.

\textsuperscript{145}Saleeby, "Racial Poisons. II. Alcohol," p. 35. His own specialization as a medical student and practitioner had been in obstetrics.

\textsuperscript{146}Saleeby, \textit{Progress of Eugenics}, p. 140.
disease" would eventually make it possible for doctors to predict and prevent the circumstances that led to the production of unfit offspring.\textsuperscript{147}

The branches of science that Saleeby was most interested in promoting were those that could generate knowledge about the racial poisons. In particular he referred to "experimental toxicology," or research that illustrated the morbid effects of alcohol and lead on the organism. Such research included demonstrations that toxins given to pregnant animals found their way into fetal tissues, breeding experiments with animals that suggested germ cells were vulnerable to the external milieu, and post-mortem microscopic observations of morbid changes to reproductive glands.\textsuperscript{148} For Lamarckian or medical eugenists such as Saleeby, this kind of research demonstrating the ultimate causes of degeneracy was far more important to social policy on the health of the nation than was the research associated with the mathematical science of biometry or even transmission genetics.

The science of eugenics was thus often conceived as encompassing such methods as


\textsuperscript{148}Saleeby, "Eugenics and Dysgenics in Relation to Alcohol," \textit{British Journal of Inebriety} 11 (1913): 1-8; "Racial Poisons. II. Alcohol," pp. 39-44. See also the bibliography in J. W. Ballantyne, "Alcohol and Antenatal Child Welfare," \textit{British Journal of Inebriety} 14 (1917): 106-16. Saleeby was especially fascinated with the scientific and propagandist value of post-mortem evidence of alcoholic disease. He cited for example a memorable presentation that had been given by E. Bertholet at a eugenics congress: "Those who were present will not readily forget the profound impression created by the author's numerous lantern-slides of microscopic sections showing alcoholic degeneration of the reproductive elements in both sexes, and especially in the case of the testicle." Saleeby, "Discussion of Alcoholism at the Eugenics Congress," \textit{British Journal of Inebriety} 10 (1912): 60. E. Bertholet, "De l'Influence de l'Alcoolism Chronique sur le Testicule humain," in \textit{Proceedings of the Twelfth International Congress on Alcoholism}, pp. 294-98.
animal experiments and autopsies, as well as family studies and social surveys of health and disease. The experimental physiologists, zoologists, pathologists, obstetricians, surgeons, and other medical professionals who carried out this research were in turn awarded recognition as authorities on alcohol and racial health. Their laboratory and clinical practices were highly valued by supporters of the eugenics cause who sought corroboration for the racial poison theory and other doctrines emphasizing the importance of nurture on the welfare of offspring. On the other hand, these Lamarckian eugenists labelled Pearson's school "unscientific" for refusing to consider seriously the large body of medical literature documenting the injuries done to offspring by parental alcohol consumption. As Saleeby asserted, "the would-be eugenist who ignores the biological sciences, and despises them and their methods, is only a danger to us all. We must be scientific or we are lost."  

"Mathematicians Poaching in Biological Preserves"

In the dispute over Pearson's first alcoholism memoir, each camp legitimized its claims to scientific authority by emphasizing its own special qualifications for carrying out research and advising on social policy regarding drink and the crisis of racial deterioration. Saleeby spoke out in defence of the traditional research practices of medical and biological scientists, thereby implicitly defending their professional role in eugenics and social reform against the encroaching mathematicians. On the other side of the coin, Pearson made it very clear that the attempts made by his biometrical school to introduce statistical techniques into medical

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research and social reform were motivated in part by concrete professional interests. By demonstrating the usefulness of their new tools in as many areas of research as possible, the biometricians hoped to create jobs for themselves and to establish statistics as a scientific specialty in its own right.\(^{150}\) Although Pearson’s statistically based science of eugenics turned out to be relatively short-lived, he and his students did eventually succeed in founding the academic discipline of mathematical statistics.

Previous accounts of the biometricians’ involvement in the arena of alcohol research have not tried to situate it within this framework of discipline building and professional interests. But in fact the Eugenics Laboratory memoirs on parental alcoholism and chronic inebriety must be recognized as just one of many incursions made by members of the biometrical school into fields of knowledge in which they possessed no expertise aside from their techniques of data analysis. As Egon Pearson put it in his biography of his father, the researchers at the Eugenics and Biometric Laboratories were often perceived with hostility as

\(^{150}\)A similar argument has recently been made with reference to scientific controversies engaged in by Pearson’s student Major Greenwood during the 1910s. Much like the debate that ensued over the Elderton-Pearson alcohol memoir, where the two sides held different opinions on the scientific methods underlying eugenics, the debate over research on typhoid vaccine therapy that took place between the biometrician Greenwood and the bacteriologist Almroth Wright involved competing claims about which methods could make medicine properly “scientific,” namely statistical \textit{versus} laboratory research. Also at stake was the professional future of medical statisticians such as Greenwood. He and Pearson were thus “just as intent on establishing statistical inference as a category of professional expertise as Wright was with establishing the importance of laboratory methods.” J. Rosser Matthews, “Major Greenwood versus Almroth Wright: Contrasting Visions of ‘Scientific’ Medicine in Edwardian Britain,” \textit{Bulletin of the History of Medicine} 69 (1995): 30-43, especially p. 40.
"mathematicians poaching in biological preserves." The alcohol studies represented one of many efforts they made to validate the wide utility of statistical methods and to capture more intellectual territory for the nascent discipline of biometry. At the same time though, it must be admitted that this particular research programme on alcohol and degeneration was special to Pearson because of its eugenic significance. He certainly did not perceive his dispute with the temperance doctors as solely a matter of professional and methodological differences.

The two series of Eugenics Laboratory memoirs on alcoholism were intended first and foremost to strengthen the hard hereditarian case against the efficacy of environmentalist social reforms and to legitimate negative eugenic policies.

Pearson and his co-workers at the Biometric and Eugenics Laboratories hoped to show that the statistical procedures of correlation, contingency, curve-fitting, and goodness of fit testing could be applied to a diversity of natural phenomena. They argued in the process that the use of these techniques "was essential for the competent pursuit of almost every science." In the Biometric Laboratory for instance, most of the work involved the sciences of heredity and physical anthropology. Pearson also published on the statistical analysis of meteorological data, while another series of studies produced under the auspices of the Biometric Laboratory challenged the competence of professional engineers on the subject of

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dam construction. By 1910 the biometricians had thus earned a well-deserved reputation as interlopers and controversialists, a fact noted by Saleeby in one of his many responses to their findings on parental alcoholism. Saleeby warned his readers that Pearson’s 1910 memoir was not merely “an accidental lapse of an amateur making what he superfluously calls his ‘first study’ of a new subject, the complexity of which was never suspected by him.” Instead, this dubious research was fully consistent with the biometricians’ history of unwelcome intrusions into fields of study in which they had no demonstrated competence.

In this paper Saleeby supplied a similar example of how the statistician Pearson had already become embroiled in numerous controversies with the Mendelian geneticists. The biometricians Pearson and W. F. R. Weldon championed their own method for studying the laws of heredity by means of statistical analysis of the distribution of traits in a population, rather than by means of the animal and plant breeding experiments favoured by the biologists. Pearson further argued on empirical and philosophical grounds that his mathematical theory of heredity was superior to the Mendelian hypothesis of unit factors.

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154 Saleeby, “Professor Karl Pearson on Alcoholism and Offspring,” pp. 64-65.

155 MacKenzie has noted that the dispute between the biometrical and Mendelian theories of heredity involved groups who may have hoped in part to enhance the value of their own distinctive skills and competences, namely mathematical versus “traditional biological” or experimental. Donald MacKenzie, “Sociobiologies in Competition: The Biometrician-Mendelian Debate,” in C. Webster, ed., *Biology, Medicine and Society, 1840-1940* (Cambridge UP, 1981), pp. 251-56.
The biometrician-Mendelian controversy thus entailed issues of both methodology and theory—a pattern that was repeated in the alcoholism debate. For in the process of introducing their innovative statistical methods into various medical and scientific fields, the biometricians often found themselves also contesting the theories and findings of the reigning scientific experts. The outcome was usually strained relations with the researchers who already claimed these territories as their own, including evolutionary biologists, temperance doctors, and medical officers of health.

Pearson had become embroiled in controversies with public health doctors over his claims about the causation of tuberculosis and infant mortality. Research conducted by the Biometric and Eugenics Laboratories between 1907 and 1913 had supposedly shown that sanatorium treatment of tuberculosis was not effective and that hereditary predisposition was a more powerful causal factor than infection or insanitary conditions. The biometricians further implied that large public expenditures on the fight against the tubercle bacillus were unnecessary because a selective death-rate was producing a natural immunity in the population. They warned that owing to neglect of the hereditary factor doctors were in the habit of giving eugenically unsound advice about the marriage of individuals from consumptive stocks. Thus Pearson’s school accused public health officials of mismanaging the crusade against tuberculosis based on incomplete knowledge about causal factors.156

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156"Eugenists really have something better to propose. . . . £1,500,000 spent in encouraging healthy parentage would do more than the establishment of a sanatorium in every township." Karl Pearson, *Tuberculosis, Heredity and Environment*, Eugenics Laboratory Lecture VIII (London: Dulau, 1912), pp. 45-46. A total of seven memoirs on the causation of tuberculosis were published by the biometricians between 1907 and 1913.
Their challenge to medical expertise on the study, cure, and prevention of tuberculosis was answered by among others Saleeby and Arthur Newsholme.

Newsholme doubted the reality of inherited predisposition to TB and chastised Pearson for his morally reprehensible opinion that susceptible stocks ought to be allowed to perish. He also echoed charges that had been levelled against Pearson’s alcoholism research: he thought that the complex statistical analysis of the etiology of tuberculosis was flawed owing to reliance on inadequate data. In particular, he noted that the task of separating the hereditary factor from opportunities for infection was not as simple as the biometricians assumed. Writing later in his career about this and other controversies that Pearson had initiated with the medical profession during the early 1900s, Newsholme cautioned that despite its high mathematical standards the biometricians’ work could not be taken as a reliable guide to social reform:

Accurate mathematical calculations made on the basis of dubious data cannot be allowed to carry influence in social investigations. In the above instances the mathematical methods of investigation were, I doubt not, admirable, but the data were unworthy of use or were wrongly used. This appears to have been the case in the famous biometrical inquiry in Edinburgh into the relation between alcoholic habits and the weight, general health, and intelligence of the children of the alcoholics. . . . It had not been made clear whether the alcoholic habits of the parents preceded or followed the conception of their offspring.157

He regretted that the efforts of the biometrical school “to throw doubt on the value of many public health activities” had succeeded in dulling the enthusiasm of many MOH for their conventional work. Doctors who read these reports on alcoholism, TB, and infant mortality

often meekly accepted the hereditarian conclusions owing to their inability to evaluate the methods being used and their "too ready belief that pontifical statements based on (to them) incomprehensible statistics must be accepted implicitly."\textsuperscript{158}

Saleeby too tried to defend the public health doctors' unique expertise in the scientific investigation and prevention of diseases such as tuberculosis. Referring specifically to the 1910 debate that had occurred between Newsholme and Pearson over this issue, Saleeby advised the public that they must "judge between the mathematician who has never diagnosed a case of tuberculosis, or watched one, or looked for a bacillus, and the former medical officer of health, who has spent the greater part of his life in doing these things."\textsuperscript{159}

Pearson's selectionist theory of infant mortality was likewise considered both ethically objectionable and an incursion into intellectual territory rightfully inhabited by medical professionals. But in this case Newsholme attempted to counteract Pearson's claims to possess a more powerful method of research by engaging the help of a former Biometric Laboratory student to carry out statistical analysis of official figures on infant and child mortality.

Pearson reported that research carried out by the Eugenics Laboratory had shown that up to 75\% of deaths of infants under the age of one were selective: these individuals died

\textsuperscript{158}Newsholme, \textit{The Last Thirty Years in Public Health}, pp. 208-9. Pearson's biographer likewise noted that the strong emotions generated among doctors and social activists by his work on alcoholism, TB, and infant mortality were "largely aroused by his claim that a mathematical technique, which they could not understand, was needed in the solution on scientific lines of the questions on which they considered themselves experts." E. S. Pearson, \textit{Karl Pearson}, p. 63.

\textsuperscript{159}Saleeby, \textit{Progress of Eugenics}, p. 215.
because of poor hereditary constitution and not bad environmental conditions.\textsuperscript{160} This hypothesis predicted that the surviving offspring in districts with high rates of infant mortality should be less prone to disease—an assumption that Newsholme tested with the assistance of the former member of the biometrical school G. Udny Yule.\textsuperscript{161} Newsholme's 1910 and 1913 Local Government Board reports on infant mortality included discussion of Yule's statistical study, which had indicated that an unfavourable environment caused equally high rates of mortality among both infants under the age of one and children aged one to five.\textsuperscript{162} Based on these results Newsholme concluded that the causes of infant deaths did not act in a selective fashion. Surviving children were not less susceptible to morbidity and mortality than were the infants who had perished in the same district. In short, this study utilizing Pearson's own techniques and carried out by one of his own trained statisticians had

\textsuperscript{160}This whole debate over the causes of infant mortality was summarized in Karl Pearson, \textit{Darwinism, Medical Progress and Eugenics}, Eugenics Laboratory Lecture IX (London: Dulau, 1912), pp. 12-15.

\textsuperscript{161}George Udny Yule had been Pearson's first pupil in advanced statistics. However, he soon parted ways with Pearson and the biometric group owing to his distaste for eugenics, and he went on to engage in several controversies with his mentor over particular statistical techniques. These are described in Donald MacKenzie, \textit{Statistics in Britain, 1865-1930: The Social Construction of Scientific Knowledge} (Edinburgh UP, 1981), especially pp. 13 and 106.

\textsuperscript{162}Newsholme, \textit{Second Report on Infant and Child Mortality}, pp. 54-61. In response to this finding, Pearson argued that comparing infant and child death rates \textit{in the same year} revealed nothing about the effects of selection. Instead it would be necessary to look at the same group of survivors a few years hence, to determine whether their less fit siblings had been eliminated during infancy or whether the survivors were equally weak. He reported that exactly such a study was then underway at the Eugenics Laboratory, which was published as E. C. Snow, \textit{The Intensity of Natural Selection in Man}, Drapers' Company Research Memoirs, Studies in National Deterioration VII (Cambridge UP, 1911). Pearson, \textit{Darwinism, Medical Progress and Eugenics}, p. 13.
produced findings contrary to his hereditarian presuppositions. Newsholme was able to argue on the basis of advanced statistical research that improvements to the environment would not in fact have dysgenic effects on the race.

In this single case Pearson could not fairly lay the blame for errors on the statistical naivety of untrained medical men. But in his other clashes with doctors, medical scientists, and biologists he emphasized his opponents' mathematical incompetence as a strategy for bolstering the credibility of his own school. For instance, he had only contempt for the methods utilized by the "social ameliorists and non-mathematicians" who belonged to the Royal Statistical Society.163 The work published by this organization remained in the tradition of Victorian social statistics until the 1930s, by which time Pearson's probability-based statistics had come to set the new standard.164 Pearson also condemned the superficial treatment of figures typically found in the reports of MOH, which relied on simple averages and inspection of tables. These studies were called "almost piteous" in the way that they utilized "a few lines of simple arithmetic" rather than proper statistical analysis.165


164MacKenzie, *Statistics in Britain*, pp. 8-9. As discussed in the previous chapter, the older style of vital statistics involved straightforward numerical information about populations, regarding such matters as births, marriages, and mortality. A good example of the methods of this non-mathematical statistical tradition can be found in Arthur Newsholme, *The Elements of Vital Statistics* (London: Swan Sonnenschein, 1889). Newsholme produced this text as a guide to what was then considered the proper handling of quantitative data. He complained that much of the statistical information being published at this time "was untrustworthy in its methods of compilation and arrangement, and fallacious in its inferences" (p. v).

165Pearson, *Darwinism, Medical Progress and Eugenics*, p. 7. Several examples of unsophisticated statistical analysis were exposed in Karl Pearson, *Eugenics and Public Health, Questions of the Day and of the Fray VI* (London: Dulau, 1912). He emphasized the
In a 1912 lecture delivered at the Royal Sanitary Institute at York, Pearson tried to justify why his biometrical school had dared to intrude into some of the traditional domains of medical officers of health. Speaking before a presumably hostile audience, Pearson began the lecture in an apologetic and self-deprecating tone. Since he himself admittedly possessed “no medical knowledge” and “only second-hand acquaintance with social problems,” he surely had “no business whatever in this field.” Nevertheless, he had come before them to preach the gospel of biometry. The public health service desperately needed the expertise of the professional statistician. Pearson therefore called for an *entente cordiale* of mathematics and medicine, of eugenics and public health. But what functions were the doctors themselves to serve in this new alliance, especially given the newly discovered fact that disease and debility were usually inherited and not related to the poor housing or dangerous habits traditionally addressed through public health administration?

Public health measures that ameliorated the conditions of life may not have been able to contribute as much to improving the race as negative eugenics, yet Pearson was willing to grant that some of these reforms could still benefit the nation by making healthy workers

paucity of data commonly used in these studies to draw sweeping conclusions about the causation of infant mortality, phthisis, cancer, or general ill health. He explained the need to apply probability theory to data analysis in order to recognize random distributions of the factors under consideration and advocated partial correlation as a powerful method for disentangling the influences of multiple factors. “There is grave danger when medical officers of health proceed on inadequate data to draw very sweeping conclusions by wholly unscientific methods” (p. 13).

happier and more efficient. Doctors themselves could contribute to the eugenics movement by undertaking further research into the causes of social ills. However, their ignorance of rigorous statistical methods meant that their labours would have to be limited to the collection of medical and social data, which they would then submit to the professional statisticians for analysis and the formulation of social policy. At least for the time being, medical men were only qualified to be "recorders" and not "interpreters." Thus in Pearson's scheme, public health doctors were to be relegated to a secondary role in social reform, while the biometricians would see their own social status elevated owing to the unique contributions they could make to the science of eugenics.

Medical practitioners themselves were as yet unqualified to fulfil the role of statistical experts owing to a gap in their professional education. "The growth of medico-social statistics during the last 10 or 15 years has led to a demand for a specialized type of medical man with a specialized training which has not yet become a recognized part of any medical curriculum." Pearson conceived it as the "ideal of the future" to produce medical students fully versed in modern techniques of data analysis. Academic departments of statistics such as his own at University College London would eventually provide this training for a "new

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167Ibid., pp. 33-34. Pearson even asserted at one point that all public health doctors effectively functioned as eugenists in a broad sense, since they shared similar concerns about the health of the next generation: "In one sense or another every man in that service is concerned with what makes for the racial efficiency of future generations—he must nolens volens become a eugenist." Pearson, Darwinism, Medical Progress and Eugenics, p. 3.

168Pearson, Eugenics and Public Health, p. 34.

class of medical mathematicians." The necessary education would however require a large investment of time: Pearson suggested that students would have to take degrees in both medicine and mathematics and then study statistics for an additional two years. Pearson's former pupil Dr. Major Greenwood became the first such professional medical statistician when in 1909 a new position was created for him at the Lister Institute. But until more medical men such as Greenwood had received formal instruction in statistics, the Biometric and Eugenics Laboratories could offer the services of their trained mathematicians and staff of computers to medical officers who needed assistance dealing with the large masses of medico-sociological data they were responsible for compiling. Pearson therefore encouraged doctors and scientists to make use of the existing facilities and expertise of his biometrical institute in a consultative capacity. In fact during the early years several psychologists and MOH visited the laboratories seeking statistical expertise for particular

170 Pearson, *Darwinism, Medical Progress and Eugenics*, pp. 8-10.

171 During the first two decades of the century, the only place in the world where advanced training in statistics was available was the Biometric Laboratory at University College. Farrall has discussed the training that Pearson provided and the types of students who chose to come and work with him. Pearson himself gave an annual course of public lectures on eugenics and statistical theory, a few of which were published as general introductions to eugenics. However, most of the specialized training was done through informal discussions and research projects. In the years before 1914, the two laboratories received 5 to 10 students at a time. Some were post-graduates doing their D.Sc. degree in statistics, others were professionals and academics who wanted to learn the new techniques. In 1915 a B.Sc. degree in statistics was introduced at University College. Farrall, *Origins and Growth of the English Eugenics Movement*, pp. 172-74.

172 On Greenwood's career see Matthews, "Major Greenwood versus Almroth Wright," pp. 41-43.

research projects. These included the American prison physician Charles Goring, who spent some time working with the biometricians on his data regarding the inheritance of phthisis and insanity.\textsuperscript{174}

Pearson and several of his disciples at the Biometric Laboratory were largely responsible for founding the modern science of statistics and ensconcing the new techniques in many fields of scientific research. Some of his students went on to pursue successful careers as academic statisticians, including George Udny Yule and Pearson's own son Egon. A few others played key roles in the gradual introduction of modern statistics into the medical and life sciences, most notably Major Greenwood and Raymond Pearl, who became professor of biometry and vital statistics at Johns Hopkins. A recent study by J. Rosser Matthews has explored the careers of Greenwood and Pearl in terms of the efforts they made during the 1910s and 20s to legitimize the nascent position of medical statistician.\textsuperscript{175} Their objective was to demonstrate both the superiority of statistical methods over clinical and laboratory practices and the need for biometrical experts such as themselves across the whole of the medical and biological sciences.

I would argue though that this goal of creating jobs for "medical statisticians" was slightly different from Pearson's own principal agenda, which was the creation of what might


\textsuperscript{175}In addition to the article cited earlier in this section, see also J. Rosser Matthews, \textit{Quantification and the Quest for Medical Certainty} (Princeton UP, 1995), pp. 104-26.
be termed "statistical eugenists." Pearson's most celebrated clashes over scientific methods and professional jurisdiction thus involved alcohol researchers and public health doctors—two groups that he perceived as rivals in the area of social reform or eugenics. Although he was surely concerned to promote statistical methods in as many branches of science as possible, his main goal was to establish the credentials of his biometricians as eugenists and to set up university departments and laboratories for eugenics research.

When Pearson promoted mathematical statistics as a field of academic study, he always envisioned that this new discipline would have one especially important application—the study of problems in eugenics. He clearly intended his Biometric and Eugenics Laboratories to serve as both a training school for statisticians and a research institute for eugenics. Most historians have thus interpreted the intellectual and institutional development of the British biometrical school in terms of this dual function.176 In fact Pearson himself was quite clear about his desire to see both mathematical statistics and a statistically based science of eugenics established as academic disciplines. He pronounced confidently that within the next ten to fifteen years every major British university would include a eugenics laboratory for the study of such problems as inebriety, tuberculosis, and the fertility of the unfit, and that the academic science of eugenics would eventually come to exercise great influence over

176 In particular Farrall and MacKenzie present the standard view that Pearson usually treated statistics and eugenics as a unified discipline, to be taught together in departments such as his own at University College. See for example MacKenzie, *Statistics in Britain*, pp. 105-6. Likewise as Theodore Porter argues, Pearson's "grand vision" was "the creation of a statistical biology as the basis of effective eugenics and, concomitantly, the development of a mathematical statistics that could be applied to virtually all areas of human knowledge." Porter, *Rise of Statistical Thinking*, p. 311. However, this view has more recently been called into question by Eileen Magnello. See Chapter III, note 70.
legislators. Given that the calculus of correlation, supplemented to some extent by the collection of family pedigrees, would be the principal method of research employed in the study of eugenics, it may even be possible that Pearson wanted to see statistics and eugenics taught together in a single department of applied mathematics. If taught separately, the two fields would still ideally remain closely connected in location, personnel, problems, and methods, on the model of his own joint laboratories.

One reason Pearson insisted that research on social problems be conducted within a university setting was to guarantee objectivity. He presumed that academics such as himself were inherently capable of avoiding the serious biases that plagued the work of temperance activists, politicians, and other interest groups who made pronouncements on important social questions:

Every politician, every platform orator, who would hesitate to express even his opinion regarding a question in astronomic physics or cytology is ready with a decisive answer to each social problem that arises. . . . They must be answered as all other scientific problems, by investigation of an academic kind in university laboratories. Found such laboratories, provide them with the biological, medical and statistical equipment needful; create them in every university so that they may act as mutual checks!179


178 “The study of eugenics centres round the actuarial treatment of human society in all its phases, healthy and morbid.” Karl Pearson, *The Scope and Importance to the State of the Science of National Eugenics*, 3rd edn., Eugenics Laboratory Lecture I (London: Dulau, 1911), p. 15. Here “actuarial” clearly meant statistical, since the reference was made in the course of discussing how to interpret correlation coefficients.

The national importance of studies in eugenics meant that these laboratories deserved large endowments, preferably under a scheme of State support for science.\textsuperscript{180} Thorough and reliable inquiries into the causes of poor health and racial decay "cannot be made without years of work, large funds, and an extensive staff, medically, sociologically and statistically trained."\textsuperscript{181} University departments with large staffs also meant employment opportunities for biometricians. The success of the science of eugenics depended upon finding more mathematicians like Pearson and his colleagues Ethel Elderton and David Heron who were willing to devote their lives to this research, and universities could provide the needed job security.\textsuperscript{182}

Pearson even anticipated that some of his associates and students might eventually pass into public or municipal service after getting their training in statistics and eugenics. From such positions they would better be able to utilize their skills by investigating firsthand such

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\textsuperscript{180}As Farrall notes however, such large-scale public funding of science would not become a reality until after the First World War, and Pearson's laboratories happened to be one of the first scientific institutions that received funding in the form of grants from the Medical Research Council and London County Council. This support was earned not on account of the biometricians' contributions to eugenics, but rather because of their role in training statisticians who by this time were greatly in demand in the civil service and public health administration. Farrall, \textit{Origins and Growth of the English Eugenics Movement}, pp. 136 and 140-41.


\textsuperscript{182}Pearson, \textit{Eugenics and Public Health}, p. 15.
eugenic problems as feeblemindedness and the health of school children.\textsuperscript{183} The biometrical eugenists might also expect to fill positions in the Government Statistical Bureau proposed by Pearson, which would be responsible for "supervising" the reports of the Local Government Board, Education Department, Registrar General, and Home Office. Such official positions would finally give statisticians and eugenists the kind of power to influence public opinion and legislation that was currently wielded by medical officers of health with their government sponsored reports.\textsuperscript{184}

As the controlling force behind the Eugenics and Biometric Laboratories for almost thirty years, Karl Pearson was largely responsible for the joint development of the modern field of mathematical statistics and the scientific branch of the British eugenics movement. Almost from the very beginning of his pursuit of statistical theory in the 1890s, Pearson's work had been driven in part or even in the main by his social interests—namely his concerns about ensuring the biological fitness of the nation.\textsuperscript{185} The intimate connection between statistics and eugenics within Pearson's research school was severed only upon his retirement from University College in 1933, when his Department of Applied Statistics was split into two separate chairs of eugenics and statistics.\textsuperscript{186} Pearson had succeeded in founding statistics


\textsuperscript{184}Pearson, \textit{Eugenics and Public Health}, p. 15.

\textsuperscript{185}I outlined the case for this standard interpretation, and Magnello's recent challenge to it, in the second section of Chapter III.

\textsuperscript{186}The two chairs were held by R. A. Fisher in eugenics and Egon Pearson in statistics. As MacKenzie reports, Pearson himself "felt that the division of his Department constituted a
as a discipline and in demonstrating the applicability of statistical methods to a wide range of problems. He also must have been pleased to see his work further the mathematization of the medical, biological, and social sciences—or in other words he helped elevate these sciences from the "observational" to the "metrical" stage of their development. However, he ultimately failed in the one disciplinary and professional goal that was no doubt closest to his heart: the establishment of eugenics as an academic discipline and of statisticians as experts in the study of eugenics. Pearson had assumed that the workers he trained would go on to help him spread the doctrine of eugenics along with the techniques of correlation, but aside from a few of his earliest recruits (David Heron, Ethel Elderton, and Edgar Schuster), most of his students did not pursue his interest in eugenics.187

As Pearson put the case for founding a school of statistical eugenists, problems of social reform and eugenics were sufficiently complex that they demanded the techniques of correlation and partial correlation to sort out all possible causal factors. Public health doctors who currently tried to investigate these problems simply lacked the necessary statistical skills. He similarly pointed out that practitioners of laboratory sciences and other researchers who


187Ironically the one student who did become a geneticist and eugenist, the American Raymond Pearl, was best known as an experimental biologist who also applied advanced statistics to his research. Despite the fact that Pearson voiced objections to experimental studies during the course of the alcoholism debate, it was probably just this kind of dually-trained worker that he would have recognized as the ideal biometrician. See for example Raymond Pearl, "Genetics and Eugenics: A Consideration of the Relation of Animal Experimentation to Human Inheritance and Infant Conservation," *Eugenics Review* 3 (1911-12): 335-39.
worked with data from clinical and social surveys were less qualified than the biometricians were to draw valid inferences from this data. These were the researchers whose methods he had denigrated in several of his alcoholism memoirs. Temperance and public health doctors had supposedly reached erroneous conclusions as to the causation of ills such as alcoholism and tuberculosis owing to their careless investigations.

As I have tried to show in this chapter, the controversy that erupted in 1910-11 over Elderton and Pearson's study of parental alcoholism can also be interpreted as a debate between professional groups representing two different styles of medical science. The biometricians and the temperance doctors championed particular skills and practices which each believed made them uniquely qualified to speak authoritatively on eugenic questions. Pearson's adversaries pronounced that his school of researchers, with their training in mathematical and statistical methods alone, could not make definitive statements about the racial poisons since they lacked necessary knowledge of such fields as physiology, pathology,

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In addition to criticizing the partisanship of the temperance doctors, he noted that their laboratory studies were always conducted on a very small scale and therefore suffered from a paucity of data for statistical analysis. Similarly the narrow clinical studies of a few dozen or hundred intemperate families that temperance doctors were accustomed to working with were statistically worthless. He cited one especially ridiculous example of untrustworthy data, in which it had been reported uncritically that 95% of the fourth generation descendants of one alcoholic couple had been found to be abnormal. Pearson and Elderton, Second Study of the Influence of Parental Alcoholism, pp. 6-30. In this paper they critiqued "three stock temperance medical memoirs" (p. 25). It should be noted that Pearson had not yet developed statistical techniques for dealing with small samples, hence he always insisted on using sample populations in the thousands, as in the first alcoholism memoir. He further suggested that an excellent source for such materials would be the prisons, asylums, and inebriate reformatories—the "national laboratories" for eugenics. Amy Barrington, Karl Pearson, and David Heron, A Preliminary Study of Extreme Alcoholism in Adults, Eugenics Laboratory Memoir XIV (Cambridge UP, 1910), p. 40.
and toxicology. For his part, Pearson believed that the hypothesis of hereditary alcoholic degeneration could only be tested by recourse to statistical analysis of data on health and fitness collected from large sample populations. Because public health doctors, laboratory scientists, and clinicians were largely unfamiliar with these novel statistical methods, the biometricians felt that it was incumbent upon them to offer their services as mathematical experts in medical and social research. Only statistically based science, Pearson contended, could serve as a suitably powerful instrument for studying social problems. His school therefore battled for hegemony with both public health doctors and medical researchers for the right to dictate social policy on crucial issues such as tuberculosis, infant mortality, and alcoholism.
CONCLUSION

British eugenic thought during the first two decades of the century was not homogeneously hard hereditarian in its science or exclusively devoted to methods of selective breeding in its reform policies. What I have termed a "Lamarckian" style of eugenics, which encompassed particular attention to the racial poisons alcohol, syphilis, and lead, can be recognized in the work of many medical professionals affiliated with the eugenics, anti-alcohol, inebriety, and infant welfare movements. All of these activists considered alcohol a special menace to the "future of the race," because it represented an important source of morbidity and mortality in offspring. Their theories of alcoholic heredity descended from late-nineteenth-century ideas associated with temperance science and Morelian degenerationism: it was widely believed by the turn of the century that alcohol could induce physical and mental defects in the descendants of drinkers, owing to germinal lesions or intra-uterine poisoning.

In addition to demonstrating the widespread popularity of ideas about alcohol as a cause of racial degeneration in Edwardian eugenic discourses, I have also argued that one occasion on which the soft hereditarian style of eugenics was most clearly presented as an alternative to mainline eugenics was during the controversy over the Elderton-Pearson alcoholism memoir. Saleeby and other writers sympathetic to both the temperance and eugenics causes reacted against Pearson's conclusion that anti-alcohol reforms could not contribute to elevating the biological standard of the race. Saleeby in particular defended his preventive
style of eugenics as a more urgently needed and efficient strategy for improving racial health, since it was able to cut off degeneracy at its environmental sources. His arguments for various pre-natal and nurtural influences on the welfare of offspring implied that there need be no contradiction between the goals of improving the inborn characters of the race and improving environmental conditions. If public health reforms and curative medicine could also benefit future generations, then these measures represented a more benign approach to race betterment than permanently segregating the unfit or allowing disease and infant mortality to run their course.

In Saleeby's ongoing dispute with Pearson, the non-mainline eugenist further objected to typical mainline assumptions about the biological inferiority of the labouring classes. However, even preventive eugenics was invariably a class-limited programme for social reform, consistent with hereditarian and public health assumptions that national efficiency and imperial strength depended on cultivating strong working-class bodies to serve as labourers and soldiers. Alcoholism was admittedly recognized as a medical problem existing at all levels of the social hierarchy, especially by eugenists such as Saleeby and Mary Scharlieb who worried about its deleterious effects on all offspring, and by members of the Society for the Study of Inebriety who treated upper-class drunkards in their retreats and private practices. Yet just as the temperance movement had always emphasized the evils of lower-class drunkenness, so too did the eugenics and infant welfare movements consider the drinking habits of the working classes to be a much more serious problem for the welfare of the nation as a whole.

Finally, I have argued that the clash between Saleeby's and Pearson's distinct styles of
eugenics arose not only from incommensurable assumptions about heredity, but also from different attitudes as to what constituted valid methods of research in the biomedical sciences. Support for laboratory and pathological versus statistical research depended partly on professional interests, as did support for environmental versus hereditarian approaches to social reform. Several groups of doctors and scientific workers, including medical officers of health, medical researchers, and biometricians, all fought to legitimize their authority as experts in the area of alcohol and racial health.

Lamarckian or preventive eugenics appears to have served as a bridge between strictly hereditarian eugenics and so-called environmentalist social reforms, such as temperance and infant and maternal welfare. Saleeby in particular, as the chief British proponent of Lamarckian eugenics, campaigned vigorously to convince his eugenist colleagues that temperance and eugenics were not at cross-purposes. He chastised those extremists such as the biometricians who had denigrated the value of all environmentalist reforms in the course of championing the need for reproductive selection:

We are enemies of our own cause if we seek to arouse internecine struggle between those who see the importance of heredity or nature, and those who see that, since bad nurture will ruin the finest natural possibilities in the world, no scheme of race-regeneration is more than half of the whole which ignores the nurtural factor of the case.¹

Saleeby presumed that improvement of the breeding stock and improvement of its conditions of life had to move forward hand-in-hand, since no human attributes or illnesses were caused exclusively by nature or nurture. Good nurture was essential to ensuring the full expression

of good hereditary make-up. Of course he further maintained that environmental factors were also eugenically relevant because they were sometimes responsible for injuring offspring and the race, either by producing deleterious germinal variations or impairing the vitality of the organism before or after its birth.

Saleeby's call for tolerance or perhaps even collaboration between hereditarians and environmentalists was by no means unusual among British eugenists. For instance the staunchly hereditarian president of the Eugenics Education Society Leonard Darwin had repeatedly encouraged cooperation between eugenists and other social reformers, including anti-alcohol doctors. But whereas Darwin preferred to see environmentalists and hereditarians pursue their own independent yet mutually compatible agendas, Saleeby's scheme of preventive eugenics implied a single agenda: public health and social hygiene measures would themselves serve to improve the hereditary fitness of the race. Thus his racial poison theory could be interpreted as more than just bridging the gap between hereditary eugenics and environmentalist public health—it implied some degree of identity between the two movements, in their goals and their reform policies.

It must be admitted however that Saleeby himself rarely made such strong claims about the relationship of eugenics to other social reform movements. For instance he usually referred to eugenics and temperance as separate programmes that utilized a common body of

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scientific knowledge and advocated the same methods for ameliorating racial health. He repeatedly urged his eugenist colleagues to open their eyes to the truth of the racial poison theory and then to cooperate with the temperance and public health campaigns which were attempting to remove the poison alcohol from the environments of prospective parents and children. Recognizing that these campaigns had something to contribute to the cause of race betterment, Saleeby also made it sound as though he wanted to expand the range of policies labelled "eugenics" in order to incorporate for example anti-alcohol measures and pre-maternity care. Alternatively, he occasionally referred to eugenics or racial hygiene as a goal or even a branch of preventive medicine.

As this example shows, the question of how the Lamarckian or medical eugenists themselves defined their programme in relation to other reform movements and to various branches of medicine is an extremely difficult one for the historian to answer. This same problem has arisen in the studies of non-mainline forms of eugenics in for example France and Brazil. William Schneider's analysis shows that French eugenicists incorporated the obstetrical programme of "puericulture" or maternal and infant care into the platform of their Eugenics Society, but does this imply that they perceived eugenics as an offshoot of obstetrics? Likewise Nancy Leys Stepan quotes one of the mottos of the Brazilian eugenicists: "to sanitize is to eugenize." Although Stepan herself notes that these reformers commonly forged alliances with public hygiene organizations, a slogan such as this might further suggest that eugenics was considered indistinguishable from social reforms and public
health measures intended to improve the living conditions of the urban poor.4

I raise these questions and possible interpretations not in the hopes of resolving them with respect to the current study, but merely as an example of the kinds of issues that have not yet been addressed by the existing scholarship on the history of eugenics worldwide, and more particularly by the recent work revealing the existence of “Lamarckian” or “preventive” styles of eugenics in several countries. Most of these studies, including my own, have focused on providing detailed descriptions of local variations in the worldwide eugenics movement. But now that we have accumulated a number of such separate studies, what broader conclusions about the nature of early-twentieth-century eugenics can be drawn? What is the larger significance of the fact that remarkably similar styles of non-mainline eugenic thought have been discovered in Britain, France, Brazil, and elsewhere?5

Obviously there is a need to revise the so-called received view which assumes that eugenics was invariably based on hard hereditarian science, that its policies focused exclusively on selective breeding, and that its defenders were mostly scientists and geneticists. In fact we now know this describes just one manifestation of eugenics—the “mainline” style identified in Britain and America—but it does not fit the dominant approaches to improving national and racial health that were championed under the rubric of

4For references to Schneider and Stepan, see Chapter I, pp. 21-29.

5Philip Pauly’s review of some recent literature also notes this gap in the historiography: given the diversity of what counted as eugenics, what universal definition can now be provided and what continuities are there with the “new eugenics”? Philip Pauly, “The Eugenics Industry: Growth or Restructuring?” Journal of the History of Biology 26 (1993): 144-45.
eugenics in many other countries. A comparative history instead reveals that medical professionals were usually the predominant occupational group in eugenics movements, and that in many of the cases so far studied these medical eugenists utilized notions of soft heredity and favoured various public health and social hygiene measures rather than negative eugenic policies. Stepan has singled out these factors in suggesting the existence of a distinct "Latin" style of eugenics characteristic of the countries represented in the International Latin Federation of Eugenics Societies, including Brazil, Mexico, France, and Italy. Building on her analysis, I might suggest that "Latin" eugenics be relabelled "medical" or "preventive" eugenics, and that Saleeby and his non-mainline British colleagues be added to this group. Most of the South African eugenists described in Susanne Klausen's recent study also fit the broad description given above, as did some of the diverse group of German racial hygienists described by both Paul Weindling and Sheila Weiss.

Clearly the fact that so many supporters of eugenics in so many countries expressed ideas that diverged in comparable ways from the received view indicates that something was going on here besides mere "misunderstanding" of the proper subject matter of eugenics. If

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Indeed many medical eugenists defined that reform programme in a very similar fashion (emphasizing in particular soft hereditarianism and preventive measures) then perhaps their ideas represented a second universal "style" of eugenics which stood alongside the mainline model in some or maybe most countries, including Great Britain. This medical style of eugenics would have addressed the problem of the health or biological quality of future generations through preventive measures such as the protection of parents from alcohol. Such special attention to the racial poisons was a defining characteristic of certain forms of eugenics in, for example, Britain, Brazil, France, and Germany. Preventive measures also could have included infant and maternal welfare work, as in the eugenics movements in France, Britain, and South Africa. And at least in the Latin American context, sanitation and public health reforms for improving slum conditions were also sometimes subsumed under the new science of eugenics. This proposed medical or Lamarckian style of eugenics was thus closely related to preventive medicine, borrowing policies such as anti-alcohol education and forging alliances with public health, infant welfare, or social hygiene campaigns. Perhaps it even had more in common with these various "environmentalist" movements than it did with the hard hereditarian style of eugenics.

The idea that medical eugenics may have been a distinct approach to race betterment that existed in analogous forms around the world is further supported by the observation that members of eugenics movements frequently attempted to make connections with their colleagues in other countries and to create an international community. Several international

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8 Stepan and Schneider both point out that supporters of more familiar hard hereditarian, negative eugenics were also found in Brazil and France.
eugenics congresses were in fact held in England and America, while the example given by Stepan suggests there were also no doubt coalitions formed between eugenics organizations in particular geographical areas such as Latin America. Just as importantly, eugenists obviously tried to keep up with the international literature. Stepan notes that Brazilian eugenicists were heavily influenced by their French counterparts, especially on the subjects of puericulture and Lamarckian heredity. As another example, Saleeby was always specially interested in continental and American research on eugenics and alcohol, and he himself was invited to France and America as a guest speaker on these topics. The use of the terminology "racial poisons" and of phrases such as the "protection of parenthood" in Latin American and South African eugenics discourses was also likely adopted directly from Saleeby's writings. Indeed Saleeby may have been one of the central figures in this proposed worldwide Lamarckian-medical style of eugenics. Members of many local eugenics movements would have been very sympathetic to his special emphasis on the racial poison theory in particular.

Preventive eugenics in various countries was often promoted as a relatively benign or humane alternative to mainline plans for permanent segregation, forced sterilization, or destruction of the unfit. But as I suggested in my brief comparison of the kinds of reforms favoured by the Edwardian eugenics and public health movements, at least in the British case it could hardly be said that preventive eugenics was either benign or progressive. Hard hereditarian eugenics, Saleeby's Lamarckian eugenics, and the public health reforms championed by most medical officers of health and infant welfare activists were ideologically

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9This point is confirmed by Nancy Leys Stepan, "The Hour of Eugenics": Race, Gender, and Nation in Latin America (Ithaca: Cornell UP, 1991), p. 88.
related in that they all emphasized biological and individual causes of social ills. Most
Edwardian reform movements focused on the "personal factor" in the deteriorating condition
of the populace—the belief that individual failings and character flaws, sometimes
interpreted in hereditarian terms, were to blame for poverty, ill health, and degeneracy. These
conservative discourses therefore emphasized the need to reform or manage individual
behaviour rather than improve the social and economic circumstances of working-class life.

The preventive style of eugenics followed this pattern with its insistence that racial
decay was caused for instance by parents' drinking habits, maternal ignorance and
inefficiency, or promiscuity that precipitated venereal disease. Eugenists and public health
doctors alike endorsed educative measures and discouraged any material or financial
assistance that might erode the sense of parental responsibility. Thus by denying the complex
socio-economic causes of misery and poor health, and rejecting the need for social welfare
legislation and better wages, eugenists such as Saleeby only helped to perpetuate a
reactionary social reform ideology. Whether similar charges can also be laid against the
"milder" Lamarckian styles of eugenics in other national contexts remains to be seen.10

My story of Lamarckian eugenics and theories of alcoholic degeneration in Britain ends
with the start of the First World War. What happened to Saleeby and his racial poison theory
after that point? Following the celebrated debate over Pearson's findings on parental

10This same argument has indeed been put forward in Stepan's work: "By structuring the
perceptions of ill health in terms of hereditary and racial 'degeneration,' the [Latin American]
eugenists moved their considerations from the political and economic spheres to the
hereditary. In this respect, the preventive eugenics described in this chapter, though
distinctive in comparative terms, had strategically much in common with eugenics
movements in other parts of the world." Ibid., p. 101.
alcoholism, the racial poison theory appears to have gone into rapid decline. Saleeby
continued to champion it in his eugenic and temperance publications into the 1920s. But
Pearson and the biometricians seemed to have won this battle, at least for the short term.
After 1911, the topic of alcohol's effects on children and the race was only infrequently
raised in the forum of the Society for the Study of Inebriety. Authorities such as John
Ballantyne and Mary Scharlieb continued to report on ante-natal hygiene and post-natal
injury to the children of alcoholic mothers, but few others addressed these topics. What
little scientific temperance literature there was left in Britain also continued citing the old
evidence for alcoholic heredity, although Saleeby's ideas and the experimental research that
supported them were more often put into service in the 1920s by the American "drys."

11 Caleb Saleeby, The Eugenic Prospect: National and Racial (London: Unwin, 1921);
'Guard your Race': Address on Eugenics and Prohibition (Westerville: American Issue,
1922); "Preventive Eugenics—The Protection of Parenthood from the Racial Poisons," in
Eugenics, Genetics and the Family: Scientific Papers of the Second International Congress

(1915): 87-89; and "Alcohol and Antenatal Child Welfare," British Journal of Inebriety 14
(1917): 93-116; Mary Scharlieb, "Alcohol and the Child-Bearing Woman," British Journal of
Inebriety 11 (1913): 62-66; and "Relation of Alcohol and Alcoholism to Maternity and Child
Welfare," British Journal of Inebriety 17 (1920): 91-139; Louise McIlroy, "Influence of
Alcohol and Alcoholism on Ante-Natal and Infant Life," British Journal of Inebriety 21
(1923): 39-42. A 1915 meeting of the SSI again addressed the topic of Pearson's alcoholism
memoir, after an introduction by Leonard Darwin. By this time the opinions were more
evenly divided than they had been at the 1911 symposium where few inebriety doctors
supported Pearson. Six now opposed him, including Saleeby and two leaders of the
temperance movement Theodore Neild and John Rae, and four supported him. Darwin,

13 For example there was a lengthy chapter on "The Child and Racial Poisons" in
On the prominent role Saleeby's work played in American debates, see Bartlett C. Jones,
Elderton and Pearson’s statistical refutation of the racial poison theory must however be recognized as only one of several influences that led to its decline by around 1915. This work certainly set a new standard for scientific research on the alcohol problem. Few of Pearson’s readers would have comprehended his statistical techniques or noted his inconsistencies in interpreting the correlation coefficients. But they could still recognize that most existing studies of inherited defect in the descendants and ancestors of drunkards were flawed and unsophisticated by comparison. Many readers were also no doubt simply impressed by the biometricians’ use of mathematics—both the complex statistical methods and the overwhelming amount of quantification. The research was accepted as authoritative because it appeared properly scientific. Pearson and his school further benefitted in this debate from the ample financial resources of the Eugenics Laboratory. They were able to publish half a dozen pamphlets detailing their findings on the alcohol question and refuting at length the arguments of the temperance men and racial poison theorists.

Ironically, the greatest defenders of Pearson’s controversial results were several biologists who during the 1910s and 20s were conducting experimental investigations into the effects of ingested alcohol on the progeny of various animal species. The Cornell biologist Charles Stockard had begun breeding experiments with guinea pigs in 1910, and in 1914 the Johns Hopkins geneticist and former Pearson postdoctoral student Raymond Pearl

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14 The *Times* justly complained that the first report was largely unreadable, an unfortunate fact given that it had obviously been “intended to influence the public.” “Alcoholism and Offspring,” *The Times*, May 21, 1910, p. 13.
began corresponding work with chickens. Both men eventually interpreted the results of their studies in terms of a revived version of Archdall Reid's 1899 theory of alcoholic selection. They argued that exposure to alcohol disabled the weaker sperm and ova, but had no effects on stronger gametes. This process of germinal selection in the alcoholized groups thus resulted in the births of more vigorous offspring than in the control groups. Both men interpreted these findings as a eugenic argument in favour of alcohol as a beneficial selective agent. In America then, coinciding with the advent of Prohibition in 1919, a new experimental consensus on alcoholic heredity emerged thanks to Stockard and Pearl.

Meanwhile in Britain, Pearson's statistical refutation of the racial poison theory also more or less coincided with the emergence of new public and scientific attitudes towards alcohol and the national drink problem. The biometricians' findings on the racial effects of alcohol consumption accorded well with prevailing anti-temperance sentiments in England after 1914. With the introduction during the First World War of the government's emergency liquor control measures, the temperance campaign had lost all impetus. By the end of the war it seemed as though a viable solution to the alcohol problem—or at least the problem of public drunkenness—had been solved by moderationist means such as reduced public house opening hours, rather than by the more extreme teetotal or prohibitionist programmes. Much

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"The story is not really so simple, since Stockard had started out as a defender of the anti-alcohol cause and at first interpreted his findings according to the racial poison theory (he found many stillbirths and enfeebled guinea pigs presumably owing to damaged germ cells). Hence Saleeby and other temperance writers cited Stockard as an ally, even though in 1918 he abruptly switched sides in the temperance debate and interpreted his findings as germinal selection. The work of both these researchers is described by Philip Pauly, "How Did the Effects of Alcohol on Reproduction Become Scientifically Uninteresting?" Journal of the History of Biology 29 (1996): 1-28."
of the alcohol research associated with the temperance movement was consequently discredited, especially by the 1918 report of the Scientific Advisory Committee to the Central Control Board.\textsuperscript{16}

This group of prestigious medical researchers and practitioners collected scientific evidence intended to sanction the extension of the Liquor Traffic Control Board’s wartime measures for controlling drunkenness. The 1918 report established a new scientific consensus on alcohol which said that moderate consumption was mostly harmless. However, the Advisory Committee devoted little attention to the particular question of the effects of parental alcoholism on offspring. Instead they were more concerned to examine the effects of heavy and moderate drinking on mental and physical efficiency. They did not specifically mention Pearson’s findings, but did conclude that the statistics collected and cited by temperance advocates were inevitably unreliable. Moreover, such studies could not rule out the possibility that defectiveness in the offspring of drinkers was due to an existing hereditary taint in the stock rather than to the action of alcohol. The heredity issue could only be resolved through breeding experiments on animals, such as those being conducted by Stockard. The 1918 Advisory Committee decided that owing to the great social importance

of this issue, it was "desirable to suspend judgment until the work has been controlled by other inquirers." The 1924 and 1938 editions of this book finally adopted the Stockard-Pearl germinal selection theory, although with the caveat that it would not be ethical to try to apply these results to human populations by encouraging the spread of alcoholic habits for the sake of the race.

By the mid-1920s, then, expert scientific opinion in Britain had rejected the theory that alcohol caused racial deterioration, although this new consensus owed more to experimental research and the moderationist drink control paradigm that it did to the Elderton and Pearson study. By 1914, there was no longer the intense social interest in the racial side of the alcohol question that had fuelled earlier research and controversies. Just after the turn of the century, paternal and especially maternal intemperance had become an especially popular topic owing to fears about physical deterioration, high infant mortality, and racial decay. The Elderton-

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18 The 1924 edition of Alcohol: Its Action was quoted at length in Weeks, Alcohol and Human Life, pp. 283 and 285. Medical Research Council Advisory Committee, Alcohol: Its Action on the Human Organism, 3rd edn. (London: HMSO, 1938), pp. 118-120. Another of the new breed of alcohol experts, H. M. Vernon, also stated that by 1928 no experimental evidence had confirmed the racial poisoning effect and most scientists had accepted the selectionist explanation instead. Vernon, Alcohol Problem, pp. 223-25. In a final effort to resolve this whole question, the Medical Research Council in 1927 sponsored an investigation repeating Stockard's work. The goal was to test his original pre-1918 conclusion that alcohol could indeed injure the germ plasm. This new study found no excess of still-births or deformities and no transmitted defects. The authors speculated that Stockard may have gotten reduced fecundity and longevity simply because he had not fed his guinea pigs a proper diet of green vegetables, and not because of any toxic influence on the hereditary material. Florence Margaret Durham and Hilda Mary Woods, Alcohol and Inheritance: An Experimental Study, Medical Research Council Special Report No. 168 (London: HMSO, 1932), pp. 9-10.
Pearson memoir appeared near the tail end of this national efficiency crisis, and so at first it generated hostile reactions from within temperance, public health, and eugenics circles. But by the start of the First World War, the sense of crisis had passed, infant mortality figures were falling, and the main focus of the eugenics movement had shifted to the problem of inherited mental deficiency. Parental alcoholism was no longer such an interesting topic for the Eugenics Society, Society for the Study of Inebriety, or infant welfare movement. Also telling is the fact that by 1920 the British system of inebriates reformatories had been completely shut down, owing to lack of government and public interest in the problem of curing and controlling habitual drunkards.

Even more importantly, the war years introduced the successful new drink control measures which rendered the total abstinence and legislative branches of the temperance movement irrelevant. Theories of alcoholic heredity had always been associated with these anti-alcohol measures and hence followed them into obscurity. Under the new paradigm, the social reform emphasis shifted towards the problem of reducing public drunkenness and lost work efficiency, and away from the risk that alcoholism posed to public health and the future of the race. The success of moderationist measures during the war further meant that alcoholism was no longer perceived as such a serious social problem: the national drink question had been resolved once and for all. Clearly the whole drink issue no longer

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commanded the attention it had during the Edwardian period. The disappearance of theories of alcoholic degeneration and alcoholic heredity thus owed more to social and political factors than to scientific evidence.
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