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EUGENICS AND THE LEFT

By Diane Paul

Introduction.—"The dogma of human equality is no part of Communism . . . the formula of Communism: 'from each according to his ability, to each according to his needs', would be nonsense, if abilities were equal."[1] So asserted J.B.S. Haldane, the distinguished Marxist geneticist, in the *Daily Worker* of November 14, 1949. Even at the height of the Lysenko controversy—and writing in the newspaper of the British Communist Party (on whose editorial board he served)—Haldane refused to retreat from the positions regarding the existence of innate human inequalities and the value of a socially responsible eugenics with which he had been associated since the 1920s. Indeed, Haldane would maintain these views, in only slightly modulated form, until his death in 1964.[2]

If Haldane's opinions were *sui generis,* they would be of only minor interest. But far from expressing views that were unique Haldane's linked beliefs in socialism, inequality, and eugenics were widely shared on the left, particularly amongst Marxists and Fabians with scientific interests. Beatrice and Sidney Webb, George Bernard Shaw, Havelock Ellis, Eden and Cedar Paul, H.J. Laski, Graham Wallas, Emma Goldman, H.G. Wells, Edward Aveling, Julian Huxley, Joseph Needham, C.P. Snow, H.G. Muller and Paul Kammerer—to note just some of the more prominent figures—all advocated (though in varying forms; some "positive"

[1] J.B.S. Haldane, "Darwin on Slavery," *Daily Worker* (London), Nov. 14, 1949. "I think the world would be a much duller place if there were no differences in innate powers between the different individuals and groups of individuals . . . Races do not differ like individuals. But I think it highly likely that they differ in the proportions of highly-gifted people" wrote Haldane in the passage immediately preceding the quote cited in the text. The views expressed by Haldane during the Lysenko period were consistent with views maintained since at least the early 30s. For example, in 1932 he asserted that "The test of the devotion of the Union of Soviet Socialist Republics to science will, I think, come when the accumulation of the results of human genetics, demonstrating what I believe to be the fact of innate human inequality, becomes important". J.B.S. Haldane, *The Inequality of Man and Other Essays* (London, 1932), 137. This assertion was made before Haldane joined the British Communist Party and later returned to haunt him. For a more detailed analysis of Haldane's role in the 1940s see the author's "A War on Two Fronts: J.B.S. Haldane and the Response to Lysenkoism in Britain", *Journal of the History of Biology,* **16** (1983), 1-37.

[2] For expressions of Haldane's late views see his speech published in *Karl Pearson: Centenary Celebration: 13 May 1957* (London: privately issued by the Biometrika Trustees, 1958); "The Proper Application of the Knowledge of Human Genetics" in M. Goldsmith and A. Mackay, eds., *The Science of Science* (London, 1964), 150-56, and "The Implications of Genetics for Human Society" in *Genetics Today: Proceedings of the XI International Congress of Genetics,* The Hague, Sept. 1963; (New York, 1965), Vol. 2, xci-cii.

and some "negative," some here and now and some only in the socialist future) the improvement of the genetic stock of the human race through selective breeding.[3] It was Shaw who argued that "there is now no reasonable excuse for refusing to face the fact that nothing but a eugenic religion can save our civilization," Eden Paul that "unless the socialist is a eugenicist as well, the socialist state will speedily perish from racial degradation" and H.J. Laski that "the different rates of fertility in the sound and pathological stocks point to a future swamping of the better by the worse. As a nation, we are faced by race suicide."[4] In the approximate half-century separating the work of Galton from the rise of fascism (which more than any other factor was responsible for the collapse of socialist enthusiasm for eugenics), such views were common.

The history of eugenics has been presented so often as though it were simply the extension of nineteenth-century social Darwinism, reflective of the same conservative values and the interests of the identical social groups, that we have nearly lost sight of the fact that important segments of the Left (as well as the women's movement, which deserves to be treated as a separate category) were once also enthusiastic about the

[3] Galton's definition of eugenics as "the study of agencies under social control which may improve or impair the racial qualities of future generations" is standard. "Negative" eugenics is oriented towards the reduction or elimination of unfavorable characteristics in a population; "positive" eugenics towards the increase of favorable characteristics. An example of the former would be sterilization of the "unfit"; of the latter, artificial insemination of women with the sperm of especially successful men.

[4] George Bernard Shaw, *Sociological Papers* (London, 1905), 74-75. Shaw was a lecturer of the Eugenics Education Society. Eden and Cedar Paul, "Eugenics, Birth-Control and Socialism" in Eden and Cedar Paul (eds.), *Population and Birth Control: A Symposium* (New York, 1917), 121-46, on 139. H.J. Laski, "The Scope of Eugenics", *Westminster Review,* **174** (1910), 25-34, on 34. Eugenical views are also expressed in (this list is illustrative, not exhaustive): Havelock Ellis, "The Sterilization of the Unfit", *Eugenics Review* (Oct. 1909), 203-06; also included in his *The Philosophy of Conflict* (Boston, 1919); *The Problem of Race Regeneration* (London, 1911) and *The Task of Social Hygience* (London, 1912); H.G. Wells, *Sociological Papers* (London, 1905), 58-60 and *A Modern Utopia* (New York, 1905), esp. 175-86; Sidney Webb, *The Decline in the Birth-Rate* (London, 1907), "Eugenics and the Poor Law: The Minority Report," *Eugenics Review,* II (1910-11), 233-41 and with Beatrice Webb, *The Prevention of Destitution* (London, 1911); Graham Wallas, *The Great Society: A Psychological Analysis* (New York, 1914), esp. 55-56; Paul Kammerer, *The Inheritance of Acquired Characteristics,* trans. A. Paul Maerder-Branden (New York, 1924), Part B, "Eugenical Part", esp. Chap. LIII "Productive Eugenics;" Edward Aveling, *Progress* (1883), 2:210-17 and *Darwinism and Small Families* (London: printed by Annie Besant and Charles Bradlaugh, 1882); Karl Pearson, *The Ethic of Free Thought* (London, 1901) and *The Problems of Practical Eugenics* (London, 1912); Edward Bellamy, *Notebooks* (in the Houghton Library, Harvard University) and *Looking Backward* (New York, 1960; orig. ed. 1888), esp. 179-81; Herbert Brewer, "Eutelegenesis," *Eugenics Review,* **27** (1935), 121-26; Julian S. Huxley, "Eugenics and Society", *Eugenics Review,* **28** (1936), 11-31 and *Memories I* (London, 1970, passim; H.J. Muller, "The Dominance of Economics over Eugenics," *Birth Control Review,* **16** (1932), 236-38, and *Out of the Night* (New York, 1935; English edition, 1936).

potential uses of eugenics.[5] Indeed, in Britain and the United States there once existed a movement popularly known as "Bolshevik Eugenics." In both countries, the enthusiasm that many biologists, like their colleagues in other disciplines, felt for the Soviet Union was rooted in their conviction that it would spur scientific development and promote a scientific outlook. For the biologists, the test of a scientific outlook was generally identified with a society's attitude towards eugenics; that is, its willingness to adopt a genuinely scientific stance towards questions of what used to be called "race betterment." The Marxist and Fabian biologists believed that Western societies had largely failed this test. To the extent that eugenic sentiment had taken hold, it was used in a pseudo-scientific way to buttress the conventional social order; to provide a scientific gloss on racial and class prejudices. There could be no valid comparison of the intrinisic worth of different individuals, they asserted, in a class-stratified society. Interestingly, they differed over what they thought a fair test would indicate about the nature of genetic differences among classes; the English (including Haldane) tending to assume that the upper classes contained

[5] In his review of the literature on eugenics, Lyndsay Farrall writes: "Today, eugenics tends to be dismissed as a pseudo-science or as a species of Social Darwinism which received support from political reactionaries or racial bigots. It is true that eugenics was used to support reactionary and racist views; but eugenic ideas and the eugenics movement were much too complex and significant to allow simplistic historical judgements to go unchallenged." "The History of Eugenics: A Bibliographical Review", *Annals of Science,* **36** (1979), 111-23, on 111. This essay represents one attempt to call into question those "simplistic historical judgments." Others who, to a greater or lesser degree, have already done so are: Jonathan Harwood, "Nature, Nurture and Politics: A Critique of the Conventional Wisdom," in J.V. Smith and D. Hamilton (eds.), *The Meritocratic Intellect* (Aberdeen, 1980), 115-28; Loren Graham, "Science and Values: The Eugenics Movement in Germany and Russia in the 1920s," *American Historical Review,* **82** (1977), 1133-64; Michael Freeden, "Eugenics and Progressive Thought: A Study in Ideological Affinity," *The Historical Journal,* **22** (1979), 645-671 and (in respect to Fabianism) Donald MacKenzie, "Eugenics in Britain", *Social Studies of Science,* **6** (1976), 449-532, and "Karl Pearson and the Professional Middle Classes", *Annals of Science,* **36** (1979), 125-36. G.R. Searle has taken issue with MacKenzie's thesis on the affinity of fabianism with eugenics in "Eugenics and Class" in Charles Webster (ed.) *Biology, Medicine and Society 1840-1940* (Cambridge, England, 1981), 217-42, arguing that we must avoid the "absurd situation" in which "the 'eugenist' label is going to be placed around the neck of nearly every major political and social thinker" (239). It is indeed the thesis of this essay that eugenical sentiment was once amazingly widespread; surely this possibility should not be dismissed *a priori.* On the relationship of eugenics to the women's movement see Linda Gordon, *Woman's Body, Woman's Right: A Social History of Birth Control in America* (New York, 1976), esp. 116-35, and David M. Kennedy, *Birth Control in America: The Career of Margaret Sanger* (New Haven, 1970), esp. 114-22. (The slogan of Sanger's American Birth Control League was "To Breed a Race of Thoroughbreds"). Daniel Kevles presented a paper on "Anglo-American Eugenics: A New Look" which analyzed the link between the eugenics movement and new ideas regarding the role of women, of sexuality, and of health. (Seminar at the Charles Warren Center, Harvard University, Dec. 16, 1981.) See R.A. Soloway, *Birth Control and the Population Question in England, 1877-1930* (Chapel Hill, 1982).

a disproportionate number of the fit—that is, those with the genes making for greater initiative and intelligence—and the Americans (such as H.J. Muller) assuming that if any class-linked differences existed, they would favor the masses. But they all agreed that, at a minimum, *individuals* varied significantly in their genetic endowments, not just in respect to physical characteristics or even intelligence but also in respect to specific traits of character and personality; that the fitter should be encouraged, and the less fit discouraged, from reproducing; and that such a policy could only be successfully pursued in a society that provided approximately equal opportunities to all its members. That the Soviet Union was perceived as such a society, and hence promised to provide the first socially-responsible opportunity to test and apply eugenical principles, was an element in its appeal to scientists.[6]

Were it not for widely-held assumptions regarding what Right and Left must stand for, there would be nothing surprising in the above remarks. Social Darwinism, after all, was associated at least in Britain with a commitment to unrestricted laissez-faire and emphasis on individual choice while eugenics implied, at a minimum, the development of a social, and often a state, concern with reproduction. As Sidney Webb wrote: "No consistent eugenist can be a 'Laisser Faire' individualist unless he throws up the game in despair. He must interfere, interfere, interfere!"[7] The involvement of society or the state in the intimate sphere of family life was not naturally appealing to those whose first principle was that the individual should think of his own interest first and who wished to keep the functions of the state to an absolute minimum. That some social Darwinists were inconsistent—individualists only where it suited their interests—need not be denied. The eugenics movement was largely composed of people who combined a rhetorical commitment to philosophic individualism with advocacy of restrictive immigration laws, compulsory sterilization laws, and an imperialist foreign policy. But it is important to note that advocacy of such policies did involve them in inconsistency; that acceptance of "social consciousness and responsibility in regards to the production of children"[8] and, even more, state action to enforce that responsibility, ran counter to the philosophic temper of social Darwinism. Haldane himself insisted, in his 1938 book *Heredity and Politics,* that attitudes towards eugenics did not correspond with the useful left/right political divisions. "The questions with which I shall deal cut right across

[6] In 1935, the editors of the *Eugenics Review* noted that: "It almost seems as if geneticists in this country will have to add Russian to their already formidable linguistic equipment". "Notes of the Quarter", *Eugenics Review,* **27** (1935), 188. A year later they also remarked that "In recent issues of the *Review* we have drawn attention to signs of increasing interest and sympathy with eugenics on the part of persons and parties belonging to the political left". "Progressive Parties and Eugenics", *ibid.* 296.

[7] Sidney Webb, "Eugenics and the Poor Law," 237.

[8] The phrase is taken from "Social Biology and Population Improvement (usually called "the Geneticists' Manifesto"), *Nature,* **144** (1939), 521.

the usual political divisions," he wrote. "For example, the English National Council of Labour Women had recently passed a resolution in favour of the sterilization of defectives, and this operation is legal in Denmark and other countries considerably to the 'left' of Britain in their politics."[9]

That the social control implicit in a eugenics program was less of a philosophic barrier to some groups on the Left than on the Right is illustrated by Lancelot Hogben's remark that "the belief in the sacred right of every individual to be a parent is a grossly individualistic doctrine surviving from the days when we accepted the right of parents to decide whether their children should be washed or schooled."[10] Hogben (who is generally considered a severe critic of eugenics) favored the California sterilization laws while Haldane did not, but both approved greater state involvement with reproductive and family questions. Genuine social Darwinists—William Graham Sumner for example, who opposed both the Chinese Exclusion Acts and the Spanish American War—would hardly be comfortable with such policies.[11] It is for this reason that those who rejected eugenics *in toto,* while an oddly assorted lot including philosophic individualists, some liberals such as J.A. Hobson, and Catholic conservatives such as G.K. Chesterton, are not readily to be found on the Marxian or Fabian Left.[12] The latter were, of course, critics of certain

[9] J.B.S. Haldane, *Heredity and Politics* (New York, 1938), 8.

[10] Lancelot Hogben, *Genetic Principles in Medicine and Social Science* (London, 1931), 207.

[11] It should be noted that some historians have begun to doubt the usefulness of the term "social Darwinism". Robert Bannister in particular has argued that the term was invented essentially to slander the people it was applied to and in fact accurately describes the views of very few thinkers, including William Graham Sumner. See his *Social Darwinism: Science and Myth in Anglo-American Social Thought* (Philadelphia, 1979). His work is a direct challenge to that of Richard Hofstadter, *Social Darwinism in American Thought* (Boston, 1955). I am grateful to my colleague James Turner for bringing the new literature in this field to my attention.

[12] J.A. Hobson, "Race Eugenics as a Policy" in *Free Thought in the Social Sciences* (New York, 1926), 200-21. G.K. Chesterton, *Eugenics and Other Evils* (London, 1922). The Pope indirectly repudiated eugenics in the 1930 Encyclical, "On Christian Marriage." Shortly thereafter, he explicitly "declared false and condemned the theory of eugenics either positive or negative" and "disproved the means taught to improve the human race which neglects natural, divine or ecclesiastical laws which concern marriage and the rights of individuals"; quoted in William H. Schneider, "Neo-Lamarckism, Natalism and Eugenics in the French Third Republic" in the Fall 1982 issue of the *Journal of Modern History.* He also notes that "there was no criticism of eugenicists in France from the Left; and the two most important opponents were either those favoring individual rights, or the Catholic Church which after 1930 took a general stand against eugenics" (Letter to the author, October 19, 1981). Leonard Hobhouse was a prominent liberal critic of eugenics but, upon closer examination, his views appear closer to some of the socialists than to those of Hobson. He rejected "positive" eugenics on the grounds that there existed no generally agreed upon measure of human social worth and also that knowledge of the laws of inheritance was insufficient to enable us to increase the production of such

kinds and uses of eugenics—and I do not mean to minimize the differences between the eugenics of the Right and that of the Left or, for that matter, the differences amongst various groups of the Left. The views of Haldane and Hogben, for example, are not identical. Moreover, whatever their differences, both are rightly characterized as critics of eugenics if this is understood as referring to the eugenics movement of their own day. *Heredity and Politics* was primarily an attack on the simpleminded scientific assumptions and the social biases of conventional eugenics. This is true also of the writings of Hogben, Huxley, Jennings, Needham, Muller, and other Left geneticists active in the 1920s, 30s, and 40s. But the virtually exclusive focus on their critical role has served to obscure the fact that they were not egalitarians except in a highly restricted sense. Haldane was fond of quoting Engels' assertion: "The real content of the proletarian demand for equality is the demand for the abolition of classes. Any demand for equality which goes beyond that, of necessity passes into absurdity"[13] and in this he spoke generally for his colleagues on the scientific Left. It has served even more to obscure the fact that their hostility was not to eugenics *per se* but to a eugenics which served the interests of the prevailing social order (indeed, their own eugenics was, as we shall see, occasionally tinged with class and racial bias; the former perhaps more surprising than the latter). When Donald MacKenzie writes that "the radical scientists of the 1930s saw the eugenics movement as a paradigm case of the anti-working class use of science, and the defeat of eugenic ideology became one of their major preoccupations"[14]—and cites Haldane and Hogben as examples—he expresses the prevailing but, if I am correct, seriously distorted view of the history of eugenics and the Left. Haldane and Hogben criticized many features of the contemporary eugenics movement but their goal, and that of their colleagues on the scientific Left, was the reformulation, not the defeat, of eugenic ideology.

Many of those whose social and racial views might have disposed them to sympathy with the aims of the eugenics movement were dissuaded

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qualities, even if we could agree on their content. See his *Social Evolution and Political Theory* (New York, 1911), Chap. 3, esp. 42-43. But he also thought society justified in forbidding the "feeble-minded" to reproduce; that is, "men and women who are not capable of independent existence but who continually drift to the gaol or the workhouse, who are fertile, and whose condition is asserted to be hereditary in a marked degree" (*ibid.*, 45-46). Also: "We are dealing with people who are not capable of guiding their own lives and who should for their own sake be under tutelage and we are entitled to impose our own conditions of this tutelage having the general welfare of society in view" (*ibid.*, 46).

[13] J.B.S. Haldane, *Heredity and Politics*, 14. Similar quotations from Lenin and Stalin appear frequently in Haldane's essays.

[14] MacKenzie, "Eugenics in Britain," 520. MacKenzie draws a sharp distinction between Marxism and Fabianism which, as is evident from the text of this essay, I believe unjustified.

by their distrust of the state, or of science, or of both (e.g., Chesterton's denunciation of eugenics as an aspect of the "modern craze for scientific officialism and strict social organisation").[15] Scientifically oriented Marxists and Fabians generally feared neither. They saw themselves as engaged in a struggle for the cause of science and materialism against the forces of obscurantism; they shared a common conception of the progressive world as one of electricity and machinery, and they welcomed an enormously expanded role for the state.

The "social relations of science" movement of the 1920s and 30s reflected the assumption of many at the time that the causes of science and socialism were inextricably linked.[16] And socialism, for the British and American scientists associated with this movement, as well as for many non-scientific socialists, not only presupposed but, for some, was essentially constituted by a substantial increase in the authority of the state. Few would perhaps go so far as Karl Pearson, the first Marxist eugenicist of any note:

> The legislation or measures of police, to be taken against the immoral and anti-social minority, will form the political realization of Socialism. Socialists have to inculcate that spirit which would give offenders against the State short shrift and the nearest lamp-post. Every citizen must learn to say with Louis XIV, *L'état c'est moi!*[17]

But neither were they in general reluctant to see the state involve itself in formerly private spheres of life. Marx may have ridiculed those who identified socialism with nationalization but this did not prevent many British and American Marxists, and in particular the scientific Marxists, from doing just that. William Morris, with his insistence that nationalization and central planning represented not the fulfillment (or even a temporary stage on the road) to socialism but its negation, may serve as an example of one extreme of a continuum of attitudes that cluster much nearer to the point represented by Pearson. However sharp in theory the distinction between Fabianism and Marxism, in practice it has often been blurred. Certainly among the scientific socialists, one is often hard pressed to distinguish, in terms of their fundamental attitudes, the one from the other (the problem is perhaps best symbolized by J.D. Bernal who belonged simultaneously to the Fabian Society and the British Communist Party).

It is worth noting in this regard that it was not the works of Marx

[15] Chesterton, *Eugenics and Other Evils,* "To the Reader".

[16] See Gary Werskey, *The Visible College: A Collective Biography of British Scientific Socialists of the 1930s* (New York, 1978). Werskey's findings are elegantly summarized by Martin Green in "The Visible College in British Science," *The American Scholar,* **47** (1977/78), 105-17.

[17] Karl Pearson, "The Moral Basis of Socialism" in *The Ethic of Free Thought* (London, 1901; essay first published in 1887), 307-08.

but the example of the Soviet state—its commitments to planning, to technical efficiency, to science education and research—that led so many scientists to socialism in the 1920s and 30s. Hence they were not, in general, troubled by the kinds of doubts about eugenics that sometimes beset those suspicious of any extension of the powers of the state. Lancelot Hogben's comment, in his 1931 text *Genetic Principles in Medicine and Social Science,* typifies the attitude of scientists on the Left: "Negative eugenics is simply the adoption of a national minimum of parenthood, an extension of the principle of national minima familiarized in the writings of Sidney and Beatrice Webb. It is thus essentially *en rapport* with the social theory of the collectivist movement"[18] If one considers, along with their statist and scientistic learnings, the little appreciated fact of the widespread assumption—virtually universal amongst geneticists—that intelligence, personality, and character were determined in substantial degree by heredity, the enthusiasm of many socialists for eugenics is not surprising.

The focus of this essay is on one particular group of socialists—English and American scientists (principally geneticists)—who, in the 1920s, 30s, and early 40s aimed to develop a socially responsible eugenics; that is, a program to be implemented in a society that had abolished social classes and hence could differentiate between the effects of heredity and environment. It therefore represents another chapter in the stories of both the social relations of science and of the eugenics movements. But contributing to a fuller and hopefully more adequate account of those movements is not its only, or even its principal, aim. That is to demonstrate the existence, by the 1920s, of a consensus amongst geneticists concerning the role of heredity in the determination of intellectual, psychological, and moral traits so complete that virtually no one—including Marxist and other Left geneticists—is to be found outside it. In his generally admirable biography of T.H. Morgan, Garland Allen asserts that in the early stages of genetics "eugenicists increasingly claimed that personality traits, intelligence, and behavior patterns were genetically determined—claims most geneticists realized had no basis in fact."[19] It would be closer to the mark to say that this was a claim that no one doubted. And from this assumption, it was but a short (if not a logically necessary) step to the advocacy of eugenics.

Most striking is the speed with which this consensus collapsed beginning in the mid-1940s. That which appeared self-evident to most geneticists in 1939 (the year of publication of the "Geneticists' Manifesto", to be discussed shortly), found but a handful of defenders two decades later. The ridicule heaped on Robert Graham's proposal to inseminate

[18] Hogben, *Genetic Principles,* 210.

[19] Garland A. Allen, *Thomas Hunt Morgan: The Man and His Science* (Princeton, 1978), 228.

artificially women with the sperm of Nobel Prize winners is a particularly striking example of the distance travelled. In 1935, the similar proposals of the Marxist geneticists—H.J. Muller (after whom Graham's sperm bank was to have been named) and Herbert Brewer—met with the widespread approval of their peers.[20] J.B.S. Haldane, for example, offered the use of his name, his money, and even his gametes on behalf of Brewer's scheme.[21] And such doubts as were expressed by professional colleagues were unrelated to the assumption of substantial genetic determination of intelligence, personality, and character. This immediately raises another question: why, within the space of perhaps two decades, should a scientific consensus have collapsed? The answer, I will suggest, has little to do with events internal to the science itself. But first let us look in some detail at the content and original reception of Muller's proposal.

H.J. Muller and "Bolshevik Eugenics"—H.J. Muller was the scientist most prominently associated, during the 1920s and 30s, with the development of a socialist eugenics. His book, *Out of the Night,* essentially completed in 1925 but first published a decade later and distributed in England by the newly-formed Left Book Club, was in effect its manifesto. At the core of his argument is the assumption that intelligence, character, and personality, like physical characteristics, have an irreducible and substantial genetic basis. Muller does not dismiss the influence of environment; indeed, in comparison with most geneticists of his time he appears a fairly extreme environmentalist. Amongst geneticists, the hereditarian position is one that asserts the sovereign and commanding role of the gene; the anti-hereditarian position that which asserts the interaction of genes and environment. Muller belongs to the latter group. Without a proper environment, he argues, the best genes will be wasted but even the best environment cannot turn an inherently stupid or selfish person into one who is intelligent or altruistic. The ideal—but also practically realizable—situation is one in which favorable environments allow the expression of superior genotypes. "There can be no doubt" he writes, "that mankind must be highly variable in regard to genes which determine the original physical basis of emotional and temperamental as

[20] Brewer, "Eutelegenesis," 121-26.

[21] Letter of Herbert Brewer to Joseph Needham (1936; otherwise undated), Joseph Needham Papers, Section 5 (Part II) Social Biology, 1936-1946, Cambridge University Library. Haldane was later to become skeptical of such proposals. Shortly before his death he wrote: "I fully agree with Muller that in so far as artificial insemination is practiced, the donors should be chosen to be as desirable as possible genetically. I am more skeptical that this or any other scheme which we can devise at present would greatly improve the genetical make-up of our species . . . . This is not to say that very great improvement is not possible. However, I do not think we know much more about how to bring it about than Galileo or Newton knew about how to fly." Haldane, *Genetics Today,* xcvi.

well as more purely intellectual traits" (the last apparently somewhere past doubting):

> Every psychological trait must be in some way dependent upon genes acting in both of these ways [directly or indirectly influencing brain structure and function], some genes acting more and some less directly. Moreover, not only the mere presence or absence of the trait, and its time of appearance, but also its intensity and many details of its mode of expression must be influenced by the genes, just as we find to be true of physical characteristics of the blood, the hair, the teeth, and all other parts of the body. In no way does this contradict the fact previously emphasized, that environment also is of the utmost importance in the development of the mental superstructure.[22]

Though we know that heredity and environment together produce intellectual and psychological characteristics, the proportion that each contributes to the final product is normally difficult to determine. In capitalist societies, environments are so unequal that only at the very extremes (i.e. feeblemindness and genius) can we conclude with any certainty that the particular genotype is deficient or superior. Normally, genetic merit and environmental good fortune cannot be distinguished. The blurring of the effects of heredity and environment, and our consequent inability to locate and make use of superior genotypes, is only avoidable in a society that offers equal opportunities to all its members. The bourgeoisie will not voluntarily relinquish its privileges; hence the necessity for social revolution.[23]

After the revolution (and currently in the Soviet Union), enormous opportunities for the genetic improvement of mankind will be available. For these to have effect, however, child-bearing and raising must first be made attractive. Muller was an ardent feminist who argued that work opportunities outside the home must be opened to mothers, that they be allowed to limit the size of their families through the legalization of birth control information and devices (and abortion as a second line of defense), that the pain of childbirth, ignored "because the doctors have been mostly men, who regard such pains in women as obligatory, or even sadistically look upon them as desirable",[24] could be mitigated and the illnesses of

[22] Muller, *Out of the Night,* 90.

[23] *Ibid.,* Chapter 6, passim.

[24] *Ibid.,* 105. Also: "On the part of a host of intelligent women, therefore, there is a growing mass strike against childbearing. May the strike prosper until the dire, age-old grievances have been removed" (*ibid.,* 104). At the birth of their son in 1924 Muller's first wife was fired from her teaching position in the mathematics department at the University of Texas because the department "felt that a mother could not give full attention to classroom duties and remain a good mother." Elof Axel Carlson, *Genes, Radiation, and Society: The Life and Work of H.J. Muller* (Ithaca, N.Y., 1981), 133. This act, from which his wife apparently never completely recovered and which had damaging consequences for their marriage, perhaps influenced his attitudes toward feminism. I am indebted to Professor Carlson for allowing me to read the page proofs of his biography of Muller.

childhood relieved, and that public organizations should be developed to aid in cooking, laundering, and other aspects of child-raising and household work. Along with this radical improvement in the position of women will come the disappearance of superstitions and taboos regarding family relationships and sex. As a result, considerations of reproduction will be divorced from those of love.[25]

In this transformed social environment, it will be possible to apply new inventions and discoveries in biology whose "development must sooner or later give us radical powers of control over what has hitherto been the female's role in child-production, which will greatly extend both the possibilities of eugenics and our ability to order these processes in the interests of mother and child. The making of such inventions will be favored when we have a system in which their value will be duly appreciated."[26] Such discoveries and inventions include the transplantation and consequent development of the fertilized egg from one female to another and the development of human eggs without fertilization (that is, without a father). Both techniques would "greatly extend the reproductive potencies of females possessing characters particularly excellent, without thereby necessarily interfering with their personal lives." Ultimately, the ideal would be ectogenesis, or the complete development of the egg outside the mother's body (an idea originally advanced in Haldane's *Daedalus* and taken up by J.D. Bernal in *The World, the Flesh, and the Devil,* both books published prior to Muller's and much admired by him).[27]

However, changes in the conditions affecting paternity are considerably more significant than those affecting maternity since the number of male sperm enormously outstrips the number of female eggs; hence it is possible to be far more rigorous in the selection of male than female sex cells. Even with present techniques it would be possible to inseminate artificially many women with the sperm of "some transcendently estimable man"; that is, men superior in intelligence and "highly developed social feeling—call it fraternal love, or sympathy, or comradeliness, as you prefer."[28] The children resulting from such matings could be expected to stand, on average, half-way in their heredity between their fathers and the average of the population. Hence, if it were not for social prejudice and inertia, we could right now dramatically raise the intellectual and moral level of the population. "It is easy to show," writes Muller, "that in the course of a paltry century or two (paltry, considering the advance in question) it would be possible for the majority of the population to become of the innate quality of such men as Lenin, Newton, Leonardo,

[25] *Ibid.,* 103-08.

[26] *Ibid.,* 108.

[27] References to *Daedalus* appear on 74 and 110. J.B.S. Haldane, *Daedalus: On Science and the Future* (London, 1924), 63-68; J.D. Bernal, *The World, the Flesh, and the Devil* (Bloomington, Indiana, 1969; orig. ed. 1928), 30, 36.

[28] Muller, *Out of the Night,* 118.

Pasteur, Beethoven, Omar Khayyam, Pushkin, Sun Yat Sen, Marx (I purposely mention men of different fields and races), or even to possess their varied faculties combined."[29]

Although we presently have the technical ability to effect this change, it would almost certainly be abused in capitalist society. Directed by the same forces that control our press and public opinion, the new system would produce not Lenins, Newtons, *et al.* but rather a population "composed of a maximum number of Billy Sundays, Valentinos, Jack Dempseys, Babe Ruths, even Al Capones. . . ."[30] However, we have little to fear in this regard since our society is at present anyway disintegrating and since a fundamental change in our attitudes toward reproduction would only come about after a transformation of society along socialist lines. Without an economic and social revolution, there will be no revolution in our attitudes towards sex and reproduction; with one, we will naturally aim to produce Lenins and Newtons and not Billy Sundays and Valentinos.[31] As we will shortly see in greater detail, some doubted that what the world needed was more Lenins (or even Newtons) but few were skeptical that, if such were the outcome desired, there stood any substantial scientific barrier to its realization.

The Reception of Muller's Book in the Soviet Union and the West

Muller's twin enthusiasms for socialism and eugenics prompted his emigration to the Soviet Union in 1934. There he worked with N.I. Vavilov at the Institute of Genetics in Moscow and completed *Out of the Night* which he presented, along with an effusive letter of personal appeal, to Stalin. Not only his choice of recipients but his timing could not have been worse since genetics had already come under severe attack as inextricably linked to eugenics, and eugenics to the old social order. There was some real basis to this charge, although Muller himself certainly felt no nostalgia for the past and always vehemently denied that his Russian colleagues had either. The fact, as Theodosius Dobzhansky notes somewhat reluctantly in his memoirs and in his private correspondence with Muller, and which Loren Graham has discussed in some detail, is that the eugenics movement in the Soviet Union had a decided class-bias, at least up to 1925. In the early 1920s, the vast majority of scientists were drawn from that class generally hostile to the October (if not to the February) revolution. Their overriding concern was with what they saw as the dysgenic effects of the Revolution, Civil War, and especially emigration which had decimated the aristocratic and intellectual classes. They collected and published genealogies of aristocratic families and those

[29] *Ibid.*, 113.
[30] *Ibid.*, 114.
[31] *Ibid.*, 114-115.

of high achievement and issued dire warnings about the consequences of continued biological degeneration.[32]

It is probable that geneticists would have come under attack during the "cultural revolution" of the 1920s even in the absence of any link to eugenics. The 1920s witnessed an upsurge of "Lamarckian" sentiment in the Soviet Union that was directed against plant and animal as well as human genetics and whose roots were found in the revolutionary optimism of a public (particularly radical students in the universities) to whom everything seemed possible to those with the will to make it so. It is hardly surprising that the newly revolutionized students and workers were more attracted to the "Lamarckian" than to the view of heredity associated with the work of Mendel, Weismann, and T.H. Morgan. But its association with a eugenics movement nostalgic for the old social order was an added burden that contributed substantially to its collapse.

As public, and also official, sentiment turned increasingly against them, the Russian eugenicists either turned to non-human genetics or to a reformulated eugenics, in which genealogies of outstanding proletarians replaced those of aristocrats. This feint fooled virtually no one, excepting the eugenicists themselves. That was how the situation stood when H.J. Muller arrived in the Soviet Union, the country on which he had pinned his eugenical hopes. It was not long before he realized that conditions for the development of a Bolshevik eugenics were less promising than he had assumed. But he decided that negative sentiment could be overcome by restating the eugenical case in more tactful terms and by going directly to the top; i.e. to Stalin, whom he (mistakenly) believed to be sympathetic to his aims.[33] Hence, *Out of the Night,* as was indicated by some of the passages quoted earlier, was written so as to flatter a Russian audience ("How many women, in an enlightened community devoid of superstitious taboos and of sex slavery", he asked rhetorically, "would be eager and proud to bear and raise a child of Lenin or of Darwin!"),[34] and the copy that he presented to Stalin was accompanied by a lengthy personal appeal effusive in its praise of Bolshevism and excoriating the racist and class uses of eugenics in capitalist societies. That Muller actually meant what he said did not make his views any more acceptable to Stalin than those of Muller's perhaps somewhat less sincere Russian colleagues, and he shortly thereafter found it advisable to leave the Soviet Union by joining a medical unit in Spain. But if his book was not pleasing to Stalin, its reception outside of the Soviet Union was highly favorable. The *Daily Worker* hailed his book as a model for Marxist scientists and *Science*

[32] Graham, "Science and Values"; *The Reminiscences of Theodosius Dobzhansky,* Columbia Oral History Collection.

[33] He was apparently advised in this by Solomon Levit. See Carlson, *Genes, Radiation, and Society,* 228. For Stalin's reaction, see 233.

[34] Muller, *Out of the Night,* 122.

and Society requested that he become a foreign editor (he accepted).[35] But it was also well thought of outside of leftist circles. I have been able to locate eighteen contemporary reviews of Muller's book from a wide range of sources (representing professional, general interest journals and newspapers, and both Left and establishment perspectives). Of the perhaps a dozen that expressed an opinion of the book, only one could be characterized as hostile, and most were decidedly favorable.[36] But what is most striking about the reviews of *Out of the Night* is the widespread assumption—on the part of those who had reservations as well as those who expressed only praise—that his program was scientifically unproblematic. One might doubt, for a variety of social, moral, religious, or political reasons whether such a program ought to be implemented. But that it could be, that traits of character and personality were substantially determined by heredity and that the mechanisms involved were well enough understood that these traits could be consciously manipulated, was generally taken for granted. Some examples:

He has produced a scheme by which the human race could be radically changed in two or three generations; scientifically, there is scarcely any doubt that it could be done. . . . [after quoting Muller's remark that it would be possible within a century or two for most of the population to be of the genetic level of Lenin, Newton, et al.] There is very little doubt about it; they could.—C.P. Snow in the *Spectator.*[37]

The important and interesting—though to some of us disturbing—reflection is, as Professor Haldane reminds us, that there is nothing in our established biologic or sociologic knowledge to preclude the material realization of most of Professor Muller's speculations before we are many generations older.—anonymous reviewer in the *TLS.*[38]

[35] Letter of David Ramsey to Muller, August 28, 1936 asking him to contribute to the first issue and to serve as a foreign editor. Muller Collection, Lilly Library, Indiana University. A reference to the *Daily Worker* review appears in a letter from Herbert Muller to Ada, March 17, 1939, but I have not been able to locate the review itself.

[36] The hostile review was by A.J. Carlson, *American Journal of Sociology* (1936), **42,** 134. Reviews other than those cited in notes 37-41 are: Waldemar Kaempffert, the *New York Times* (March 15, 1936), 4; Ray Erwin Baber, *American Sociological Review* (1936), **1,** 533; P.W. Whitney, "Communist Eugenics," *The Journal of Heredity* (1936), **27,** 132-135; J.L. Stocks, *Manchester Guardian* (June 9, 1936), 7; Harold Ward, *New Republic* (1936), **86,** 284; *Survey: Journal of Social Work* (1936), **72,** 159; *The Adelphi* (1936), **13,** 192; *Booklist* (1936), **32,** 383; Julian Huxley, "Marxist Eugenics", *Eugenics Review* (1936), **1,** 66-68; *The Journal of the American Medical Association* (1936), **107,** 68; *Scientific American* (1936), **154,** 230; *Quarterly Review of Biology* (1936), **11,** 348.

[37] C.P. Snow, "Revolution in Ourselves", *Spectator* (1936), **157,** 64. Also: "there is no doubt that the supreme abilities, which make a man useful in the world, are a property of the genes. When genetics is more universally understood it will not be easy for us all to escape the consequences which that truth brings."

[38] *Times (London) Literary Supplement* (June 20, 1936), 526.

The author of this book is an American geneticist, at present occupying an important position in a research institute in the Soviet Union. Essentially his thesis is that genetics can and should contribute to a vigorous, practical eugenics of the positive sort . . . . There is in this suggestion nothing unreasonable or impractical either technically or socially.—Percy M. Dawson (a Marxist physiologist) in *Unity.*[39]

. . . a torrential procession of ideas and suggestions, often Wellsian in daring but compelling by their reasonableness and convincingly practicable nature.—" P.J." in *Science Progress*[40]

It is important to note that technically many of the proposals are either possible at present or likely to be rendered possible by a relatively small amount of further research.

It is certain that Professor Muller's views on the technique of human improvement will not be universally accepted. Some geneticists do not agree that the use of a few chosen sires is the best way of achieving rapid selection. It can be stated, however, that in spite of possible disagreement on some points, the book will be of great interest to anyone concerned with the problems of eugenics, as it is both genetically and technically accurate.[41]

Evidence from numerous other sources confirms what is tentatively suggested by the reviews of Muller's book: the genetic determination of what Muller usually called "temperament" was assumed by a great many people; among geneticists, the assumption was nearly universal. H.S. Jennings is usually considered an anti-hereditarian; in the context of his time and profession that characterization is correct. But in 1930 Jennings published an entire book on *The Biological Basis of Human Nature* in which he asks: "What part do genes and environment play in temper, temperament, character, conduct, in artistic, scientific, literary or technical attainments; in the accomplishment of the work of humanity?" and ultimately answers:

Nothing can be more certain than that both these sets of factors play a role. No one will deny the modification of mentality and behavior by the diverse experiences undergone by different individuals. And no one who examines the facts summarized in earlier paragraphs of this chapter . . . no one who gives these facts unprejudiced consideration and due weight will deny that diversity of genes affects mentality and behavior.[42]

Of course, in other professions and in the society at large there were

[39] Percy Dawson, *Unity* (May 18, 1936), 115.

[40] "P.J." (unidentified author), *Science Progress,* (1937), **31** 790.

[41] K. Mather, *Nature* (1936), **138,** 228.

[42] H.S. Jennings, *The Biological Basis of Human Nature* (New York, 1930), 152. Also: "We know further that such matters as dullness, stupidity, and their opposites, various diversities of temperament, and the like, depend on the genes. For they are known to depend on the nature, quality and quantity of certain of the internal secretions or hormones; and these latter in turn depend on the genes" (157).

many who dissented from what we would today characterize as the hereditarian position (although they appear generally to have been "Lamarckians" as well) and even the geneticists and other extreme hereditarians disagreed about such matters as the nature of desirable traits (not everyone valued cooperativeness, sociability and kindness—indeed, not everyone valued intelligence; some worried that eugenical policies would produce more intelligent people than society could safely absorb),[43] about the practical efficacy and morality of compulsory measures, about the value of "positive" versus "negative" eugenics, and about the technically most efficient means to promoting eugenical ends. The left geneticists of the '20s, '30s, and '40s (for example, Muller, Brewer, Haldane, Hogben, and Jennings, to name some of the most active of that group) tended to emphasize voluntary measures and generally made their advocacy of large-scale eugenical measures dependent upon social revolution (as they believed had occurred in the Soviet Union and would shortly occur in the capitalist states of Europe and North America).[44] Their eugenics was also generally—though as we will see not always—free of the cultural prejudices that not just distorted, but provided the *raison d'être,* for much of the eugenics of the right. In short, it was typically a mild sort of eugenics, one distinguished in some of its essential features both from right-wing eugenics and from the eugenics espoused by others on the left such as Aveling, Shaw, or the Webbs. But what the geneticists do not doubt, as the reviewer for the *Journal of the American Medical Association* put it in his very favorable notice of Muller's book, is "that what has been found true for the fruit fly is surely applicable to man." And he goes on to note that "In other words, the book is an excellent exposition of the extreme hereditarian doctrine as held by most modern geneticists."[45] From the "outside" even the most environmentally oriented geneticists appear as "extreme hereditarians." And given the hereditarian viewpoint, it is but a short step to the advocacy of eugenics (i.e. selective breeding), although it is one that might not be taken as a result of other moral, religious, or political considerations. These considerations did not figure prominently—when they figured at all—in the outlook of geneticists in the 1920s and 1930s. Hence, they came to see themselves as

[43] This was a major topic of debate. For example, see "Does the World Need More Morons?" Symposium #7, *Eugenics Review* (1929), **2**, 20-22 and Walter B. Pitkin, *The Twilight of the American Mind* (New York, 1928). A reviewer of Pitkin's book concluded that "Pitkin's view of the direction of evolution of society seems to us in general sound: namely, that society is requiring less and less intelligence to keep it going. If this is so, what is the evolutionary use of trying to increase the number of highly intelligent people"? *The Quarterly Revivew of Biology* (1929), **4**, 266-267.

[44] In *Out of the Night,* Muller asserted that his program would be voluntary. However, his correspondence indicates that he was willing to use coercion should a voluntary program fail. See Carlson, *Genes, Radiation, and Society,* 186.

[45] *The Journal of the American Medical Association* (1936), **107**, 68.

confronted by enemies on all sides; on the one, "extreme environmentalists" such as the Watsonian behavioralists and many "Lamarckians", on the other, proponents of conventional, that is, race and class-biased eugenics. They perceived themselves as defenders of a reasonable but embattled middle-ground, upholding the claims of genetics and the potential social uses of genetics against both those who refused to face scientific facts and those who distorted the facts in the service of racism, nationalism, and class prejudice.

Perhaps the best statement of their position is the "Geneticists' Manifesto" of 1939. Written primarily by Muller, and signed by twenty-two other distinguished geneticists, it was issued at the Seventh International Congress of Genetics at Edinburgh in response to a request from Science Service for a reply to the question: "How could the world's population be improved most effectively genetically"? The central point of the statement, whose signatories included Haldane, Hogben, Huxley, Needham, Dahlberg, Dobzhansky, and Waddington, was that the genetic improvement of mankind depends upon a radical change in social conditions. It was, essentially, a summary edition of *Out of the Night* as might be expected, given its authorship. According to the signatories of the "Manifesto":

> The most important genetic objectives, from a social point of view, are the improvement of those genetic characteristics which make (a) for health, (b) for the complex called intelligence, and (c) for those temperamental qualities which favour fellow-feeling and social behavior rather than those (today most esteemed by many) which make for personal 'success', as success is usually understood at present.
>
> A more widespread understanding of biological principles will bring with it the realization that much more than the prevention of genetic deterioration is to be sought for, and that the raising of the level of the average of the population nearly to that of the highest now existing in isolated individuals, in regard to physical wellbeing, intelligence and temperamental qualities, is an achievement that would—so far as purely genetic considerations are concerned—be physically possible within a comparatively small number of generations. Thus everyone might look upon 'genius,' combined of course with stability, as his birthright.[46]

A Note on Race and Class.—Both the "Geneticists' Manifesto" and *Out of the Night* assume substantial genetic diversity amongst individuals, but not amongst nations, races, or classes. The "Manifesto" does not address itself to the question of class differences but brands as "unscientific" the "doctrine that good or bad genes are the monopoly of particular peoples or of persons with features of a given kind. . . ." In *Out of the Night,* Muller considers the arguments for the genetic superiority of the upper-classes, argues that as good a case could be made for its opposite, but concludes that they are both bad arguments; selection could not be

[46] "Social Biology and Population Improvement," *Nature* (1939), **144**, 521.

responsible for any but insignificant differences amongst classes (or races or other groups). However, Muller's standpoint—reflected in the "Manifesto" as well as the book—was not fully shared by all his Marxist colleagues. Haldane, in particular, believed both that races differed in their "proportions of highly-gifted people" and that the lower-classes were less well genetically endowed than the upper. The former view is not so surprising. I have elsewhere argued that nineteenth-century Marxists, Marx and Engels included, shared the cultural prejudices of their age[47] and, in any case, Haldane only asserted that races were different, not that any possessed a monopoly of virtues (hence his views were consistent with those expressed in the "Manifesto" though not with Muller's argument in *Out of the Night.*) What is somewhat surprising is the assumption of the genetic superiority of the upper-classes. That Marxists should reflect the racial and cultural prejudices of the larger society is hardly astonishing; but one does not expect them to reflect its class prejudices. The racial views of Karl Pearson or Edward Aveling (the latter argued that a greater innate difference separated blacks from whites than humans-in-general from apes) is more a sad commentary on the age than on them.[48] But it is surprising to find Aveling asserting that "today millions upon millions prefer to remain stupid and vicious, and therefore poor."[49]

The distinction between the deserving and undeserving poor, traditionally associated with Fabianism, in fact informed the perspective of a much wider group (which comes to the same thing as the point made earlier: the distinction between Fabian and Marxian socialism is often blurred, especially for scientists). Many people considered Edward Aveling (the common-law husband of Eleanor Marx and foremost popularizer of Darwinism to a socialist audience in Britian) to be a rogue but no one, including his friend Friedrich Engels, doubted that he was a Marxist. Yet Aveling's views are in many respects, including his disdainful attitude towards much of the proletariat, indistinguishable from those of another of his friends, the 'Fabian' Havelock Ellis.[50] So in the next generation, those of Haldane more resemble the Webbs in some important respects than they do what is conventionally thought of as the Marxist view.

After publication, in 1932, of a controversial speech by Muller on "The Dominance of Economics over Eugenics," Haldane sent him a letter taking issue with the contention (later repeated in *Out of the Night*)

[47] Diane B. Paul, " 'In the Interests of Civilization': Marxist Views of Race and Culture in the Nineteenth Century," *Journal of the History of Ideas,* **32** (1981), 115-38.

[48] Aveling's racial views are expressed in *Progress* (1883), **2**, 209-218 and *The People's Darwin: Or Darwin Made Easy* (London, n.d.), esp. 20-22.

[49] Aveling, *Darwinism and Small Families,* 3.

[50] On Ellis, see Sheila Rowbotham and Jeffrey Weeks, *Socialism and the New Life,* (London, 1977), 176.

that if social classes differed genetically—and Muller indicated his doubts of this—there was as good a case to be made for the genetic superiority of the masses as of the elite. Those most likely to succeed in the present social order, he argued, were those with predatory characters; the honest, the selfless, the social, and those "too intelligent to confine their interests to their personal success" were likely to be left behind.[51] Haldane objected that capitalism was dysgenic precisely because the conventional view was true. A capitalist system ensures that the rich, who are innately superior (since the more able and intelligent are likely to succeed) will be outbred by the poor. Only when the economic position of the latter improves will they choose to have fewer children. (Muller remarked, on a copy of the letter he sent to Solomon Levit in Moscow: "Remember that Haldane is supposed to represent the left most wing in English scientific thought").[52] Haldane was at that point a socialist, though not yet a Marxist. However, his standpoint on this matter did not change with his political commitments. Even throughout the Lysenko period, when he was under severe pressure to abandon, or at least moderate his position, he refused. In public, as well as private, he continued to assert that the upper-classes were innately more able and intelligent.

Whatever one may think of the content of Haldane's views, it is hard not to admire the independence of spirit that led him to argue in *The Modern Quarterly* (the leading journal of orthodox Marxism in Britain) at the height of the Lysenko controversy that: "In many countries the poor breed much quicker than the rich, even when allowance is made for their higher death-rate. Thus the valuable genes making for ability, which bring economic success to their possessors, are getting rarer, and the average intelligence of the nation is declining."[53] In 1957, on the occasion of the Karl Pearson centenary celebration, he asserted that: "Pearson and his colleagues were completely right in one respect. Even if, in spite of his predictions, the nation has improved in some measurable directions, it would have improved more if, say, a million children who were born to unskilled labourers had been born to skilled workers, teachers, and the like."[54] It is testimony to the extraordinary power of class in British society that even a member of the Executive Committee of the Communist Party and its most distinguished spokesman on science should have been unable to escape its grip.

The Collapse of Consensus.—Through at least the early 1940s, there existed something very close to a consensus amongst geneticists concerning the genetic determination of intellectual, psychological, and moral

[51] Muller, *Out of the Night,* 89-90.

[52] Letter of Haldane to Muller, July 29, 1932. Muller Collection.

[53] J.B.S. Haldane, "Biology and Marxism," *The Modern Quarterly,* 1948, **3**, 2-11, on 9.

[54] Haldane, speech in *Karl Pearson: Centenary Celebration.*

traits. Although differing over the relative contributions of nature and nurture, virtually no one doubted that the latter played a substantial role in the expression of mental and behavioral, as well as physical, characteristics. Given this assumption, it followed naturally that, at a minimum, the less fit elements of the population should be discouraged from breeding and the more fit encouraged. H.S. Jennings is probably as anti-hereditarian a geneticist as can be found in the pre-War period and one who would certainly be dubious of Muller's claim that we could, within a century or two, produce a race of Lenins and Newtons, but even he agreed that if groups with desirable traits outbred the more inferior, the general level of the population would slowly rise. Although less optimistic than Muller about what could be accomplished in a relatively short span of time by "positive" eugenics, and convinced that environmental measures would have a greater short-term effect, he nevertheless argued that positive eugenic measures also have their uses for, if they operate slowly, they do work in the same direction as environmental improvements. And as was the case with most who were dubious about the short-run utility of positive measures, this produced a greater emphasis on negative eugenics.[55] As the earlier quote from Lancelot Hogben indicates, one cannot conclude that those skeptical of the possibility of rapid selection were therefore opposed to eugenics. Perhaps no one is more associated with a skeptical attitude towards the efficacy of positive measures than H.G. Wells, but he concluded from this that it was all the more necessary to sterilize "failures."[56] Eden Paul was equally skeptical and considerably more extreme in his proposed solution. Thus it is not surprising to find Jennings approving the suggestion that "habitual criminals not be allowed to propagate" and noting that "It is incredible that anyone should knowingly advocate continuing the operations of defective genes that produce such frightful results as idiocy or insanity. To stop the propagation of the feebleminded, by thoroughly effective measures, is a procedure for the welfare of future generations that should be supported by all enlightened persons."[57] (Before proceeding, it must be noted that there *are* such things as homozygous deleterious genes that result in mental deficiency and hence presumably a good deal of human misery. That at least a part of what used to be called "feeblemindedness" results from genetic defect is fact, not ideology, in spite of the fact that the revulsion that most people today feel for everything associated with eugenics has served to obscure the kernel of truth at the core of the position generally adopted by Left scientists in the 1920s, 30s, and 40s. The motivations of geneticists

[55] Jennings, *The Biological Basis,* esp. Chapters IV and VI.

[56] Wells, *Sociological Papers,* 60. "It is in the sterilization of failures, and not in the selection of successes for breeding, that the possibility of an improvement of the human stock lies."

[57] Jennings, *The Biological Basis,* 238.

like Jennings, while undoubtedly complex, included the desire to save families unnecessary heartache.) In any case, the Jennings "anti-hereditarian" and "anti-eugenical" position can be summarized as follows: we may not be able to agree on what constitutes fitness, or be able to produce more of it (at least in the short-run) if we could, but we do know what constitutes unfitness and we can and ought to act so as to substantially eliminate it. In short, wherever one looks—among right-wing geneticists, left-wing geneticists, and political moderates; amongst those conventionally associated with an environmentalist position as well as those considered hereditarians—one finds agreement on the fact (though of course not the extent) of substantial genetic determination of intellectual, psychological, and moral traits and the advocacy of some kind of eugenics.

This consensus collapsed with amazing rapidity. Two decades after publication of the "Geneticists' Manifesto" only a relative handful of geneticists remained active defenders of the position that it articulated. How can such a rapid and near-total collapse, or at least apparent collapse, of consensus he explained?

It would certainly not be by developments internal to the science during this period. It is sometimes asserted that the discovery of polygenic inheritance, gene-gene interaction, and gene-environment interaction undermined the assumptions behind the advocacy of eugenics. However, the existence of these processes had been established much too early to serve as explanations of changes in attitudes occurring in the 1950s and 60s. Indeed, Muller himself had insisted as early as 1911 that a character is usually the product of several or many genes and always emphasized the complexity of the relationship of genes to characters. A more plausible factor was the supposition, during the 1950s, of a much larger proportion of genetic variability in natural populations than had hitherto been suspected. If populations were so rich in genetic diversity, it seemed reasonable to assume that selection was not acting to "purify" them and that diversity must therefore be advantageous. This view (the "balance" school of population genetics) is associated most prominently with Theodosious Dobzhansky and it was, at least in part, Dobzhansky's favorable assessment of genetic diversity that led to his (and his colleague L.C. Dunn's) polemics with Muller and the "classical" school during the 1950s and 60s. But their argument, however significant (and deeply felt to the participants), did not concern the genetic determination of intelligence, character, and personality or the desirability of eugenics *per se*.[58] It was rather a dispute over the goals and methods of a eugenics program, given widely differing assessments of the value of genetic diversity. Dobzhansky and Dunn always assumed a substantial genetic basis for non-physical

[58] *The Reminiscences of Theodosius Dobzhansky, The Reminiscences of L.C. Dunn,* Columbia Oral History Collection, *passim.*

human differences and both insisted that they were not hostile to a properly conceived eugenics. That Dobzhansky signed the "Geneticists' Manifesto" of 1939 was perfectly consistent with his life-long beliefs. As Richard Lewontin has noted:

> Both [the balance and the classical] schools are equally 'biologistic' in that they believed the nature of human society to be strongly influenced by the distribution of genotypes in the species. For Muller, human progress meant enriching the species for a few superior genotypes while for Dobzhansky it means increasing, or at least maintaining, genetic diversity. Neither view admits the possibility that genetic variation is irrelevant to the present and future structure of human institutions, that the unique feature of man's biological nature is that he is not constrained by it.[59]

Hence theirs was an argument *within* the consensus that we have been exploring. It is not necessary to minimize the distance separating Dobzhansky and Dunn from Muller in order to insist that for all that they thought of themselves—and are generally perceived by others as being—antagonists in a deep and sometimes bitter scientific-cum-political dispute, that in another perspective they stand together outside of the consensus developing amongst their contemporaries.

The breakdown of the old consensus is rooted in political, and not scientific, events. Or perhaps it would be more accurate to say that the role played by events internal to science was indirect and largely unrelated to the discovery of new facts or the development of new theories. If one asks: what accounts for the development of the original "determinist" consensus, the answer seems obvious. The tendency of scientists to push a new theory to the furthest reaches of its domain—and then beyond—is well-known. The history of science is littered with examples (none more striking than Darwinism) of attempts to generalize theories and extend the range of their application far beyond the narrow problems that constituted their original domains. This is presumably true also of the early decades of genetics. How else explain why scientists of every possible political persuasion—conservatives, liberals, Marxian and non-Marxian socialists—share a common commitment to what we would today call biological determinism and a sympathy for some kind of eugenics following from their determinist assumptions? The geneticists of the early decades of this century agreed on nothing except the proposition that the salvation of mankind was to some extent bound up with the improvement of its genes. Whatever their broader politics, they were all genetic imperialists.

But it is also typical that after the first extreme phase—the period in which attempts are made to generalize the theory, to make of it a new world-view, to extend the range of its scientific and its social applica-

[59] R.C. Lewontin, *The Genetic Basis of Evolutionary Change* (New York, 1974), 31.

tions—that a reaction occurs. Those routed in other fields begin to regroup and to defend themselves; even the imperialists begin to have doubts. This natural process of retreat following (over) expansion would almost certainly have undermined consensus amongst geneticists even in the absence of the momentous social forces which ultimately swamped it. As it was, the consequences of Hitler's rise to power in Germany and Stalin's in the Soviet Union were enough to throw into disrepute, at least temporarily, the assumptions shared by nearly all geneticists until the mid-1940s.

Biological explanations of non-physical human differences rapidly lost favor in the general revulsion towards the uses to which they had been put by the Nazis. Left geneticists were of course affected by that development, but also by developments specific to socialists. The 1940s witnessed the rapid intensification of pressures both from without, and from within, their own camp; pressures that had threatened the existence of a left eugenics from its inception. In the 1920s and 30s, scientists such as Muller, Haldane, Huxley, and Needham had struggled to disassociate their program from the racially and class distorted eugenics of the right while at the same time battling the environmentalism of the left. During the 1940s, assaults from the right and left escalated in intensity; racial and class prejudice gave way to Fascism and environmentalism to the views of T.D. Lysenko. What had always been a precarious middle ground, defended against the environmentalism of their political allies and the racial and class prejudices of other eugenicists, simply collapsed.

Moreover, even those left scientists who broke with the Soviet Union, and who therefore remained free to continue asserting the relevance of genetics to society, escaped one horn of a dilemma only to impale themselves on another. For the claim of the left geneticists had always been that the biological improvement of mankind presupposed the transformation of social relationships. It was only in a society providing equal opportunities to all its members that a eugenics program was defensible. In the early 30s, most believed both that the Soviet Union was or was becoming such a society and also that it would provide a model for Western industrial states, then caught in the grip of the Great Depression. Faced with the persistence of capitalism in the West, those who concluded that the Soviet experiment had failed were forced by the logic of their position to abandon their eugenical hopes. Logic, however, does not always control action even amongst scientists. Neither Muller nor Haldane nor Huxley, all of whom continued to argue the case for eugenics into the 1960s, ever confronted the apparent inconsistency of their position. Indeed, what is most striking about the left geneticists in general—including those, like Dobzhansky and Dunn whose views were considerably more moderate—is how little they changed over the years. Circumstances changed, shifting the ground from under their position, but their own views were little affected by them. Their cause failed, not as

the result of desertions from the ranks, but from the inability to win new recruits.

Virtually all of the left geneticists whose views were formed in the first three decades of the century died believing in a link between biological and social progress. Their students, coming to intellectual maturity in a radically different social climate, either did not agree or, in a social climate inhospitable to determinism, were not willing to defend that position. The appearance of socio-biology probably signifies a fading of the bitter memories surrounding the events of the 1940s. As those memories recede, it would not be surprising to witness the re-emergence of a doctrine that was never defeated in the scientific arena but rather submerged by political and social events. From the late 1940s to the early 70s, it has been, perhaps, a viewpoint latent amongst scientists only requiring another change in the social climate to prompt its expression.

University of Massachusetts, Boston Harbor Campus