Answers Research Journal 6 (2013):71–77.
https://assets.answersresearchjournal.org/doc/v6/german-american-eugenics.pdf

German and American Eugenics in the pre-World War 1 Era

Danae M. McGregor, Ten Patrick Henry Circle, Patrick Henry College, Purcellville, Virginia 20132

Abstract

Before the traumatic devastation of the Nazi genocides, eugenics theory was widely accepted by both German and American scientists, especially in the pre-World War 1 era. Modern eugenics originated in the work and theories of Francis Galton in the late nineteenth century. Its later policy implementation was determined by both the amount of private wealth and the degree of governmental centrality in America, Germany, and other nations. As American eugenics experienced a rapid rate of development and implementation, German "hygienists" soon began to promote their own eugenics programs.

Although intellectual and practical connections existed between the ideas discussed in both United States of America and Germany, differences in cultural circumstances, including political, journalistic, and education-related opportunities, impacted eugenic progress. Ultimately, while there is not sufficient justification to fault one nation alone, the extent to which American eugenics was successfully implemented heavily influenced the German interest and experimentation in their emerging theory of eugenics.

Keywords: eugenics, Galton, sterilization, racial hygiene

Introduction

The question of ultimate responsibility for Nazi eugenics tends to induce one of two responses. In the popular mind, culpability is often assigned to Germany, the birthplace of Hitler's Nazi ideologies, and the eugenic advancements made by American scientists are overlooked, often due to honest ignorance. The less prevalent view, discussed in Edwin Black's recent work, *War Against the Weak* (Black 2003), paints the American eugenicists, lawyers, and philanthropists as the original perpetrators of German eugenics.

The data from the pre-World War 1 era supports a surprising conclusion—namely, that without the efforts of American eugenicists, German eugenics might not have achieved such historical extent as to cause the Holocaust. Beyond the scientific arguments for bettering the human race, the ideological environments of both Germany and America impacted the cultural reception of eugenics ideas.

Nineteenth Century Roots of Eugenics

Galton and the notion of eugenics

In 1883, Francis Galton coined the word eugenics, composed of the two Greek words for "well" and "born" (Galton 1883, p. 138) to represent his studies on heredity and evolution. Galton advocated the idea that increasing the level of desirable qualities, as well as decreasing the amount of negative ones, was possible with the use of eugenic methods (Brown 2001). Galton was primarily concerned with the distribution of socially beneficial qualities throughout the population—emphasizing variety, not uniformity, as the goal (Blacker 1952).

In his mind, mankind should earnestly embrace their ability and, consequently, carry out our responsibility to shape future humanity. Galton's enthusiasm for a systematic study of genetics and biographical trends did not lead him to immediately advocate social reform. In his work *Inquiries into Human Faculty and Its Development*, Galton acknowledged the ease of access to any number of "possible agencies by which the evolution of a higher humanity might be furthered," but cautioned against doing so until the idea of race improvement itself could be fully established in the popular mind (Galton 1883, pp. 219–220). Implementation required the prior cultivation of a local understanding and support of eugenics theory.

Galton and Darwin's interaction

As the cousin of Charles Darwin, Galton was very familiar with the theory of evolution by natural selection. Galton had great respect for his cousin's work:

> I rarely approached his [Darwin's] general presence without an almost overwhelming sensing of devotion and reverence…This is the simple outline of my scientific history (Galton and Galton 1997, pp. 570–573).

Although both men worked with the fundamental concept of heredity, Galton deviated from Darwin's view of evolution.

Galton concluded that since natural selection seemed unable to progress by small, gradual steps, the evolutionary process must be discontinuous, occurring primarily via mutations that could cause major

ISSN: 1937-9056 Copyright © 2013, 2016 Answers in Genesis, Inc. All content is owned by Answers in Genesis ("AiG") unless otherwise indicated. AiG consents to unlimited copying and distribution of print copies of *Answers Research Journal* articles for non-commercial, non-sale purposes only, provided the following conditions are met: the author of the article is clearly identified; Answers in Genesis is acknowledged as the copyright owner; *Answers Research Journal* and its website, www.answersresearchjournal.org, are acknowledged as the publication source; and the integrity of the work is not compromised in any way. For website and other electronic distribution and publication, AiG consents to republication of article abstracts with direct links to the full papers on the *ARJ* website. All rights reserved. For more information write to: Answers in Genesis, PO Box 510, Hebron, KY 41048, Attn: Editor, *Answers Research Journal*.

The views expressed are those of the writer(s) and not necessarily those of the *Answers Research Journal* Editor or of Answers in Genesis.

leaps in evolutionary progress (Gillham 2001, p. 95). Another point of difference was on the nature of the mechanism of inheritance. Although Galton agreed with Darwin that inheritance occurred through the blending of some characteristics, such as skin color, for most characteristics, such as eye color, he advocated particulate inheritance (Galton and Galton 1998).[1]

Galton's international response

From the 1880s into the first decade of the twentieth century, Galton's ideas about heredity, evolution, and race betterment were added to the theories of decay, inheritance, and other Mendel- and Darwin-inspired notions that were beginning to circulate in American intellectual and popular life (Kühl 1994). The international culture was at first not prepared to adopt and implement systematic eugenics programs. Galton wisely refrained from advocating such a movement until he perceived that the theory had become familiar enough to the majority of his international audience. Although his first program's reception in 1901 was not overwhelmingly successful, he was nevertheless encouraged by each generation's (albeit, minimal) eugenic improvements (Black 2003).

His caution enhanced his efforts to cultivate global eugenics awareness and enthusiasm; by 1906, some of Galton's works had been translated into German and published in the *Archiv für Rassen- und Gesellschafts-Biologie* (Galton and Galton 1998). Over the years, Galton continued to fine-tune his definition of eugenics. In 1908 he expanded his definition to

> the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally (Galton 1908, p. 321).

While the international community may not have been prepared to embrace eugenic measures in 1883, over time they began to feel more comfortable with the culturally-laudable ideas of transmitting mostly "good stock" to future generations.

American Eugenics in Early Twentieth Century

American eugenics theory

Galton's notions of race improvement spread quickly in the United States. American eugenics was divided into two major camps: negative and positive eugenics. Whereas Galton was predominantly a proponent of positive eugenics (which expected the healthiest and most successful individuals of a race to propagate good traits), the American scientific community aligned itself more closely with negative eugenics. Due to the classless nature of the American society, American negative eugenics were "non-elitist (and) democratic" in operation and encouraged occasional purges of the weakest members of society (Carlson 2001, p. 234). Funding was provided by the nation's wealthiest and most educated men who were convinced of the necessity and importance of the research.

As is true of all new ideas, in order for collective action to occur, the ideas must first be perpetuated and validated. Not surprisingly, then, many institutions of higher education served as hotbeds of early eugenics research and experimentation. Land-Grant Universities, for example, were responsible for institutionalizing science curriculum for American schools, and earned the nickname "the people's university" for their role in making scientific knowledge easily accessible to the public. (Glenna, Gollnick, and Jones 2007, p. 282). Land-Grant Universities, such as the state universities of Virginia, Delaware, North Carolina and West Virginia, provided an academic polish for the underdeveloped theory of eugenics.

Additionally, in the early 1900s eugenics instruction was integrated into the curriculum of other prominent colleges. The range of institutions included Harvard, Princeton, Yale, Purdue, University of Chicago, Northwestern University, University of California (Berkeley), New York University, Stanford, and even Alma College in Michigan, and Bates College in Maine—all of which either explicitly or implicitly wove eugenics instruction into their curricula. By 1914, over 40 institutions offered eugenics instruction (Cravens 1988). The ability of these institutions to recruit both professors and students to this new discipline was impressive.

Prominent American eugenicists

The three giants of the American eugenics movement were Charles B. Davenport, Harry S. Laughlin, and Harry C. Sharp. Davenport was one of the first to attempt policy implementation of his ideas in American eugenics research. Davenport enthusiastically marketed his research plans to the Carnegie Institution, in the hope of securing financial and social backing for his eugenics campaign. In 1902 he presented his ideas to the board, which focused on the establishment of a more permanent experiment and research station at Cold Spring Harbor.

For additional support and scientific credibility, Davenport turned to the American Breeders Association. In January 1904, the Carnegie Institution formally inaugurated the station for Experimental Evolution of the Carnegie Institution at Cold Spring Harbor, New York (Black 2003). Seven years later, Davenport published his views on eugenics in his 1911 book titled *Heredity in Relation to Eugenics*, which promoted, among other programs, mass compulsory sterilization of the unfit (Davenport 1911).

[1] Particulate inheritance: inheritance in which offspring manifest discrete characters each inherited from one or other of the parents (Anonymous 2012).

Harry S. Laughlin, a contemporary of Davenport, was an ardent negative eugenics advocate. The Cold Spring Harbor Eugenics Record Office in its early development needed someone to "prod the legislatures and regulatory agencies into proliferating the eugenic laws envisioned" (Black 2003, p. 48). Laughlin actively sought to inculcate eugenics discussion in the minds of all Americans. He outlined his strategy at the National Conference on Race Betterment in 1914, which involved nationwide instruction

> to lobby for legal restraints of marriage and habitation of the unfit, to agitate for the segregation of those identified as unfit, and finally to use sterilization…if the unfit are released into society (Carlson 2001, p. 242).

Laughlin's dedication to eugenics principles drove his desire to see them translated into actual policy.

Dr. Harry C. Sharp utilized the mechanism of sterilization to embrace both sides of the eugenics movement. In 1909, Sharp asserted that eugenicists possessed the dual ability to both restrict the propagation of the unfit while enhancing the circumstances of the less fortunate. Sharp was the first to impose sterilization on inmates. In his mind, such measures were the only rational means of eliminating a "most dangerous and hurtful class" of people (Sharp 1902, p. 412).

Eugenics facilities and organizations

The first two decades of the twentieth century saw the inception of a number of eugenic organizations, including the American Eugenics Society, the Eugenics Record Office, the Galton Society, the Institute of Family Relations, and the Race Betterment Foundation (Allen 1986, p. 226). The Race Betterment Foundation, founded in 1906, sought to compile a eugenic registry to supplement the existing Eugenics Record Office list (Carlson 2001).

In 1914, Laughlin gave his first speech on eugenics to the National Conference on Race Betterment in Battle Creek, Michigan, stressing that purifying the "breeding stock of the race at all costs is the slogan of eugenics" (Laughlin 1914, p. 478). The hesitancy of his audience, such as the order from the Carnegie Institution of Washington for Davenport to check Laughlin's enthusiasm from causing further legal controversy, is indicative of the prematurity that such drastic eugenic action held in the American popular mind (Carlson 2001).

The two primary American organizations were the American Breeders Association's Eugenics Committee and the Eugenics Record Office of Cold Spring Harbor. The American Breeders Association comprised biologists and practical breeders who attempted to apply their knowledge of genes and heredity as applied to animals to human beings. In 1906, Davenport, who was a member at the time, suggested the formation of a eugenics committee for the purpose of expanding research efforts to include methods of analysis for separating superior blood from inferior blood (Black 2003). Davenport envisioned the American Breeders Association as a center for future eugenics policy, lobbying to the American public (Carlson 2001).

The Eugenics Record Office at Cold Spring Harbor, New York, was the hub of the American eugenics movement. As the only eugenics institution to have its own staff and research facility, the Eugenics Record Office served as a

> meeting place for eugenicists, a repository for eugenics records, a clearinghouse for eugenics information and propaganda, a platform from which popular eugenic campaigns could be launched, and a home for several eugenical publications (Allen 1986, p. 226).

The office's first mission was to locate the "most defective and undesirable Americans" to begin to unobtrusively compile their genetic inheritances records (Black 2003, p. 45).

Although explicit eugenics practices were not socially acceptable in the office's early years, Americans displayed little resistance when asked to produce their genetic records. The threat of social instability was perceived as a result of the proliferation of feeblemindedness—a term expanded to include not only the mentally retarded, the crippled, or the insane, but also the troubled, the unfortunate, and criminals (Black 2003).

Implementation/sterilization

The concept of sterilization was predominantly an American idea, with roots in early twentieth century cases of illegal sterilization for criminals and socially degenerate people groups (that is, the Jukes). At that time, eugenicists were convinced that conditions such as insanity, feeblemindedness, epilepsy, pauperism, alcoholism, and other forms of social deviance were fundamentally hereditary. Furthermore, regardless of their environment defective people were believed to propagate at a greater pace than the normal population (Myerson et. al. 1936).

The process of converting eugenics principles into policy, however, was difficult. State sterilization laws varied in both intent and extent, and were frequently edited, amended, and erased. In 1909, Indiana, Washington, California, and Connecticut adopted sterilization laws; in 1911, Iowa, Nevada, and New Jersey followed suit; New York conceded in 1912 as did Kansas, Michigan, North Dakota, and one year later in Oregon (Black 2003, p. 69; Kühl 1994, p. 17) (see Fig. 1). Interestingly, California's sterilization laws were the most forcefully applied: nearly half of the 38,087 sterilizations carried out by these

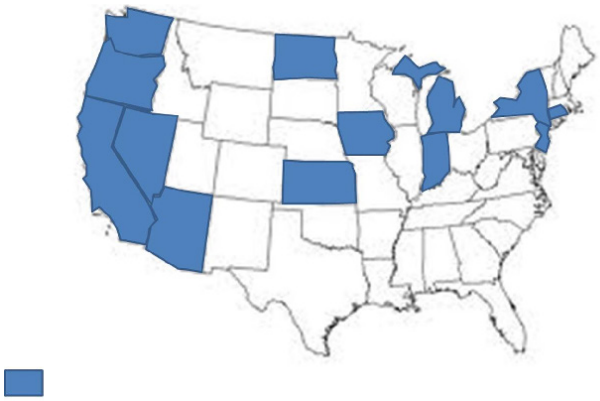

Fig. 1. States with sterilization legislation prior to World War 1 (approximately 1900–1914).

laws through 1942 were performed in California (Carlson 2001, pp. 256–257). Throughout the early 1900s, multiple American eugenics societies convened to discuss compulsory sterilization legislation, segregation for the unfit, and screening for defectives in the population. The inconsistency of the legislation alerted the public to the dubious constitutionality of several sterilization laws, effectively preventing eugenics practices from quietly attaining widespread legal acceptance.

German Eugenics in Early Twentieth Century

Roots of eugenics in anti-semitism

Anti-semitism did not become widespread in Germany until after 1870, at which point the theory of social Darwinism and Galton's earliest ideas of eugenics were gaining public support. Although Galton never openly declared his view of Jewish inferiority, Jews in Germany began to experience more explicit discrimination. Galton did not wish to deny the legitimacy of the Jews' desire to propagate, he firmly believed the quality of propagation to be more important than the quantity: in a 1910 interview with the *Jewish Chronicle,* Galton affirmed that "(I)t is still more important to determine that children shall be born from the fit and not the unfit" (Galton 1910).

Racial hygiene theory

The beginning of eugenics thought in Germany differed from the American experience. The phrase "race hygiene," or *rassenhygiene*, was the name of early German eugenics theory, coined prior to Galton's invention of eugenics (Black 2003, p. 263; Carlson 2001, p. 318). Rassenhygiene was not born out of a sense of racial superiority. Prior to Hitler's regime, rassenhygiene was primarily a hygiene movement. German eugenicists essentially equated fitness with levels of cultural and social productivity and achievement, whereas unfitness was equated with asocial behavior and the inability to contribute meaningfully to society.

The German notion of eugenics embodied a technocratic, managerial logic—the idea that rational management of a nation's population was considered the best way to govern (Weiss 1987). As Germany transitioned from being an agricultural society to an industrial one, the nation's perception of the socially unfit morphed as well. Despite the disunity of social classes, Germans viewed unproductivity as a social and genetic ill. Talk of race hygiene, and, later on, of racial betterment, soon began to fall on much more receptive ears.

Prominent hygienists

The German race hygiene movement owes its origin to the combined efforts of a number of eugenicists, both domestic and international; the work of Wilhelm Schallmayer and Alfred Ploetz were especially influential. Ploetz, who has been credited as the founder of eugenics as a science, initially gained international recognition in 1904 when he founded the German Society for Racial Hygiene (Proctor, Weindling, and Lenz 1946). In the same year, he started the journal *Archiv fur Rassen und Gesellschaftsbiologie* (*Archives of Race Science and Social Biology*) to promote eugenic research (Black 2003). In a later publication, Ploetz clarified his idea of rassenhygiene as not only encompassing the English term *eugenics,* which entailed measures of improving hereditary qualities of a population, but also measures controlling quantity (Ploetz 1904).

William Schallmayer was arguably the second most influential German hygienist and echoed the concerns of American eugenicists about the rate of propagation of the unfit. German eugenics was primarily a strategy to improve national efficiency via cultural hegemony. Within this larger goal, Schallmayer uniquely strove to both preserve better social heredities from extinction and suppress unproductive traits from persisting (Weiss 1986). While Schallmayer endorsed negative eugenics, he initially refrained from explicitly promoting state legislation to achieve his goals, preferring instead to achieve them by attempting to install a new moral code into society (Weiss 1986).

Institutions/eugenics research

In the first part of the twentieth century, Germany had established few eugenics institutions, especially compared to the United States. The institutionalization of German eugenics did not begin until 1910, when Ploetz founded the German Society for Racial Hygiene in Berlin. The Society offered membership only to white individuals who were "ethically, intellectually, and physically fit" and from whom society could expect "economic prosperity" (Ploetz 1907, pp. 1 and 17).

The members of the society were confident that they could document the superiority that the nation could achieve if racial hygiene principles were to be instituted. The next hygienic institution to impact Germany, The Kaiser Wilhelm Institute for Anthropology, Human Heredity, and Eugenics, would not be founded until after the First World War (Weingart 1989).

Pre-World War 1 Eugenics Conversation

Global factors of cultural readiness

It is important to consider the global atmosphere and its impact on the development of eugenics theory in the decades leading up to the World War 1. In Germany, though not necessarily in America, there was a growing acceptance of state intervention into society. Social Darwinism permeated much of American intellectual, social, and political thought in this era, making the nation a virtual incubator for the growth of racist and eugenic principles. The status of "personhood" (or the standard for fitness) prior to World War 1 was granted to all white, privileged males; the strictness of status requirements mirrored eugenic conversation concerning fitness, especially with regards to allegedly superior biological traits (Barrett and Kurzman 2004, p. 503). In terms of political readiness for eugenics policies, the United States of America, with its unusually decentralized governmental structure, was free to adopt such programs in the absence of centralized state approval (Barrett and Kurzman 2004).

Rate and places of development

Eugenics movements developed in different places from 1880 to 1914 with both similarities and distinctions. Arguably, the larger, global institutional shift of that era is responsible for the simultaneity of the various eugenics movements. The American movement enjoyed greater implementation of eugenic policy before the principles were culturally accepted. The German hygienists openly expressed admiration for the success of the Americans, and attempted similar techniques in their own culture.

International collaboration

The international collaboration of pre-World War 1 eugenicists reflected the unity between American and German scientists. The universal desire for eugenic principles to infiltrate all of western society drove eugenicists in Dresden, Germany, to hold the first International Hygiene Exhibition in 1911. The following year, the International Eugenics Congress was attended by over 300 scientists, including representatives from both the United States and Germany (Kühl 1994). The 1912 Congress reinforced the existing contacts between the various countries represented there. The onset of World War 1 two years later resulted in far less collaboration of eugenics research and development than originally projected.

The eugenics movement developed more rapidly in American scientific culture than in Germany. German racial hygienists were well informed of American eugenic practices due to the work of Geza von Hoffmann, whose 1913 book *Racial Hygiene in the United States of America*, condemned the rashness of the American bureaucracy and praised American eugenic theory as the model for Germany to emulate (Kühl 1994). As the director of the Cold Springs Harbor Station for Experimental Evolution, Davenport frequently kept in contact with German eugenic thinkers as they fine-tuned and revised their genetic theories in the first decade of the twentieth century (Black 2003).

The intellectual tie between the United States and Germany in the twentieth century is also apparent in Davenport's presence on the editorial boards of two widely-read German hygiene journals, *Zeitschrift für Rassenkunde und ihrer Nachbargebiete* and *Zeitschrift für menschliche Vererbungsund Konstitutionslehre*, respectively, the *Journal of Racial Science and its Neighboring Areas* and the *Journal of Human Inheritance and Constitution Teaching* (Kühl 1994). Both Germany and the United States contributed to the global theory of eugenics; both are partially culpable for providing the scientific data that later was used to, in the minds of scientists and educated elites at least, validate the pursuit and implementation of eugenics programs (see Fig. 2).

Conclusion

The question of ultimate culpability for the rise of Nazi eugenics cannot be answered with one backwards glance in history. In light of the diversity in both interpretation and understanding inherent to the tracking of the development of a scientific theory, the factual evidence must be considered. By 1914, the notion of eugenics had evolved into a much more complex scientific discipline well beyond Galton's original intentions.

In his work, *Hereditary Genius*, Galton's views on race were the first cautious attempts of a nineteenth century man to understand the occasionally disadvantageous realities of biological diversity—his motive was to prevent, not to inflict, suffering (Blacker 1952). The seed of eugenic thought which Galton planted in 1883 could not have matured into the burgeoning, global movement of 1914 without the fertile soil of American laboratories, universities, and court rooms, nor without the systematic cultivation of German racial hygienists and the centralized political organism of the German state.

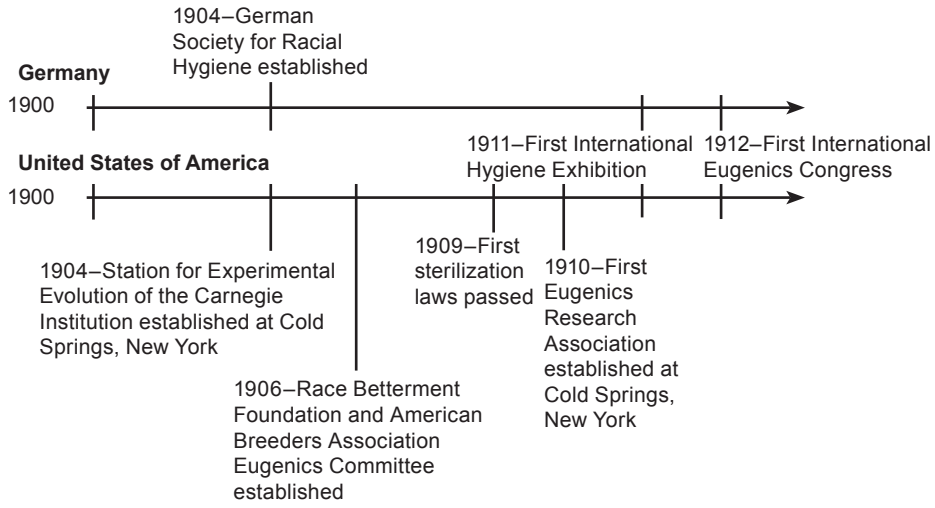

Fig. 2. Timeline of eugenics developments in America and Germany 1900–1912.

References

Allen, G.E. 1986. The eugenics record office at Cold Spring Harbor, 1910–1940: An essay in institutional history. *Osiris* 2nd series 2:225–264.

Allen, G.E. 2004. Was Nazi eugenics created in the US? *EMBO reports* 5, no. 5:451–452.

Anonymous. 2012. *Oxford English dictionary online*. Retrieved from http://www.oed.com/view/Entry/138273 on January 13, 2013.

Barrett, D. and C. Kurzman. 2004. Globalizing social movement theory: The case of eugenics. *Theory and Society* 33, no. 5:487–527.

Black, E. 2003. *War against the weak: Eugenics and America's campaign to create a master race*. New York, New York: Four Walls Eight Windows.

Blacker, C.P. 1952. *Eugenics: Galton and after*. London, United Kingdom: Duckworth.

Brown, P. 2001. Genetics and mankind: From the past into the future. *The Journal of Social, Political, and Economic Studies* 26, no. 1:345–370.

Carlson, E.A. 2001. *The unfit: A history of a bad idea*. Cold Spring Harbor, New York: Cold Spring Harbor Laboratory Press.

Cravens, H. 1988. *The triumph of evolution: The heredity-environment controversy, 1900–1941*. Baltimore, Maryland: Johns Hopkins University Press.

Davenport, C.B. 1911. *Heredity in relation to eugenics*. New York, New York: Henry Holt and Co. Repr. New York, New York: Arno Press Inc., 1972.

Galton, F. 1869. *Hereditary genius*. London, United Kingdom: Macmillan.

Galton, F. 1883. *Inquiries into human faculty and its development*. London, United Kingdom: J.M. Dent & Co.

Galton, F. 1908. *Memories of my life*. London, United Kingdom: Methuen.

Galton, F. 1910. Eugenics and the Jew. *The Jewish Chronicle*, July 29, p. 16.

Galton D.J. and C.J. Galton. 1997. Francis Galton: His approach to polygenic disease. *Journal of the Royal College of Physicians, London* 31, no. 5:570–573.

Galton, D.J. and C.J. Galton. 1998 Francis Galton: And eugenics today. *Journal of Medical Ethics* 24, no. 2:99–105.

Gillham, N.W. 2001. Sir Francis Galton and the birth of eugenics. *Annual Review of Genetics* 35:83–101.

Glenna, L.L., M.A. Gollnick, and S.S. Jones. 2007. Eugenic opportunity structures: Teaching genetic engineering at U.S. land-grant universities since 1911. *Social Studies of Science* 37, no. 2:281–296.

Kühl, S. 1994. *The Nazi connection: Eugenics, American racism, and German national socialism*. New York, New York: Oxford University Press.

Laughlin, H.H. 1914. Calculations on the working out of a proposed program of sterilization. In *Proceedings of the national conference on race betterment*, ed. E.F. Robbins, pp. 478–494. Battle Creek, Michigan: Race Betterment Foundation.

Myerson, A., J.B. Ayer, T.J. Putnam, C.E. Keller, and L. Alexander. 1936. *Eugenical sterilization: A reorientation of the problem*. New York, New York: The Macmillan Company.

Ploetz, A. 1904. Die begriffe rasse und gesellschaft und die davon abgeleiteten disziplinen. *Archiv für Rassen- und Gesellschafts-Biologie* 1:2–26.

Ploetz, A. 1907. *Zweite bericht der internationalen gesellschaft für rassenhygiene*, pp. 1, 17. Ploetz family archive.

Proctor, R.N., P.J. Weindling, and F. Lenz. 1946. Eugenicists in Germany in 1946. *Eugenical News* 31:17, 20–21, 141–142, 225.

Sharp, H.C. 1902. The severing of the vasa deferentia and its relation to the neuropsychopathic constitution. *New York Medical Journal* 75:411–414.

Stauff, J. 1994. Book review of *The Nazi connection: Eugenics, American racism, and German national socialism*. *The History Teacher* 28, no. 1:114–115.

von Hoffmann, G. 1913. *Die rassenhygiene in den Vereinigten Staaten von Nordamerika*. Munich, Germany: Lehmann.

Weingart, P. 1989. German eugenics between science and politics. *Osiris* 2nd series 5:260–282.

Weiss, S.F. 1986. Wilhelm Schallmayer and the logic of German eugenics. *Isis* 77, no. 1:33–46.

Weiss, S.F. 1987. The race hygiene movement in Germany. *Osiris* 2nd series 3:193–236.

Bibliography

Cullen, D. 2007. Back to the future: Eugenics–a bibliographic essay. *The Public Historian* 29, no. 3:163–175.

Farber, S.A. 2008. U.S. scientists' role in the eugenics movement (1907–1939): A contemporary biologist's perspective. *Zebrafish* 5, no. 4:243–245.

Kevles, D.J. 1999. Eugenics and human rights. *British Medical Journal* 319, no. 7207:435–438.

Kimmelman, B.A. 1983. The American Breeders' Association: Genetics and eugenics in an agricultural context, 1903–13. *Social Studies of Science* 13, no. 2:163–204.

Laughlin, H.H. 1925. Eugenics in America. *The Eugenics Review* 17, no. 1:28–35.